Panasonic

11th Generation Full High Definition Plasma Display TV

This Seminar covers the following models: TH-42PX80U, TH-50PX80U, TH-42PZ80U, TH-46PZ80U

TH-50PZ80U, TH-42PZ85U, TH-46PZ85U, and TH50PZ85U

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⚠ **Warning**

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Models Line-up (46" PDP TV Introduction for 2008)

Panasonic has introduced a 46" PDP TV for 2008

2008 Panasonic PDP TV Series (11th Generation)					
	42"	**46"**	**50"**	**58"**	**65"**
HD	TH-42PX80U (1 P Board)		TH-50PX80U (1 P Board)		
FHD	TH-42PZ80U (1 P Board)	TH-46PZ80U (2 P Boards)	TH-50PZ80U (2 P Boards)		
FHD	TH-42PZ85U (1 P Board)	TH-46PZ85U (2 P Boards)	TH-50PZ85U (2 P Boards)		
FHD	TH-42PZ800U (1 P Board)	TH-46PZ800U (2 P Boards)	TH-50PZ800U (2 P Boards)	TH-58PZ800U (2 P Boards)	
FHD		TH-46PZ850U	TH-50PZ850U	TH-58PZ850U	TH-65PZ850U

All the new 42" PDP TVs only have 1 "Power Supply" (P) board.

The 46", 50", and 58" models, with the exception of TH-50PX80U, have 2 "Power Supply" (P) boards.

These boards have different part numbers

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2008 Models Comparison

	HD	FULL HD	
Model	TH-42PX80U TH-50PX80U	TH-42PZ80U TH-46PZ80U TH-50PZ80U	TH-42PZ85U TH-46PZ85U TH-50PZ85U
Resolution	1,024 by 768 (42") 1,366 by 768 (50")	1,920 by 1,080	1,920 by 1,080
PC Input			1
D Board		Yes	Yes
A Board	Yes	Yes	Yes
Contrast Ratio	15,000:1	20,000:1	30,000:1

Panel Life Expectancy = 100,000 Hrs
Altitude/Elevation Rating = 2800 Meter (9240 feet)

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TH-42PX80U Comparison to Last Year's Models

The Models TH-42PX80U and TH-50PX80U do not have a D board. The circuits normally found in the D board on previous models, are now built into the A board.

D Board

No D Board
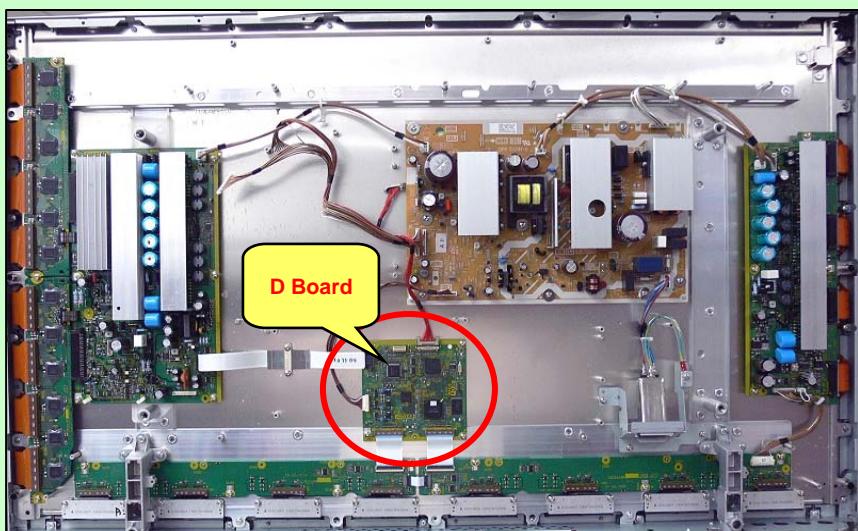
TH-42PX75U (2007 Model)
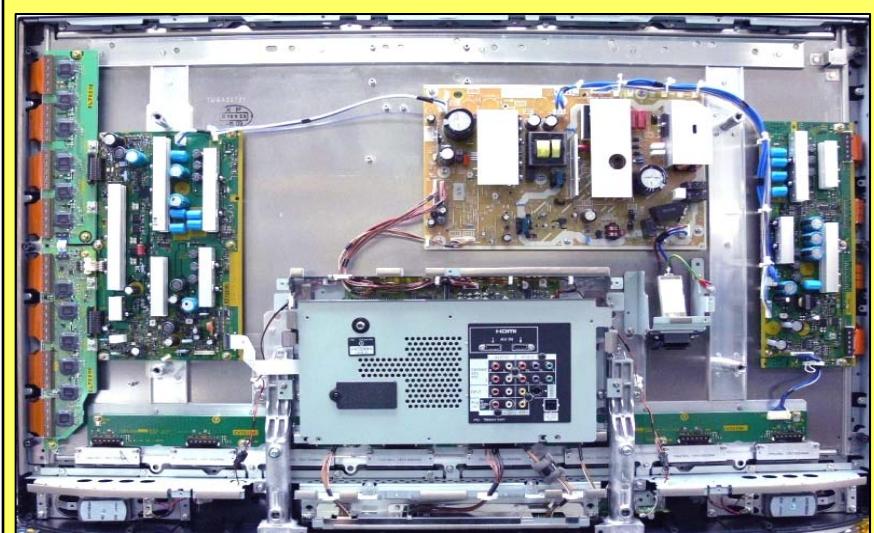
TH-42PX80U (2008 Model)
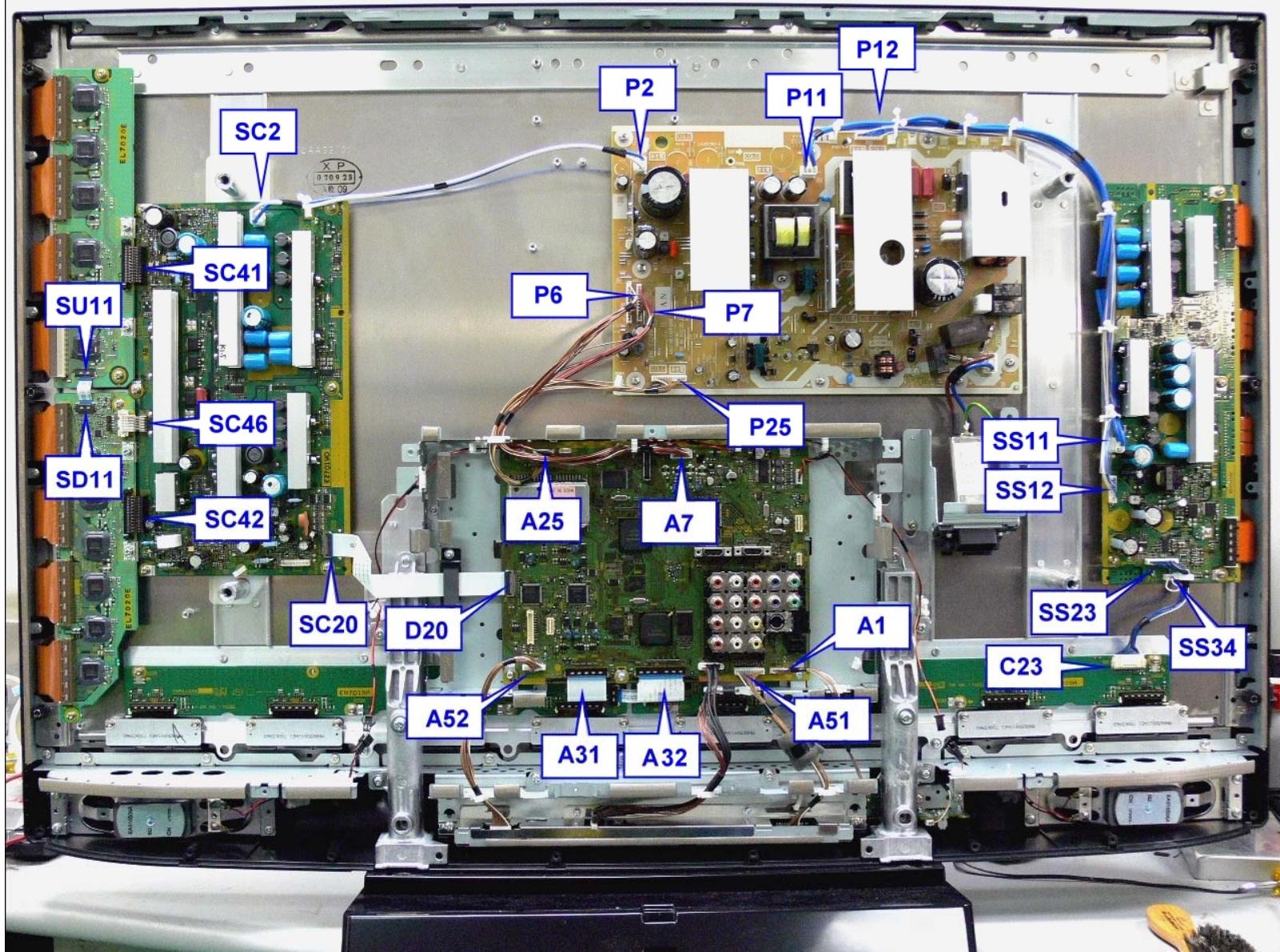
This slide shows the location of the connectors on all the boards

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TH-42PX80U

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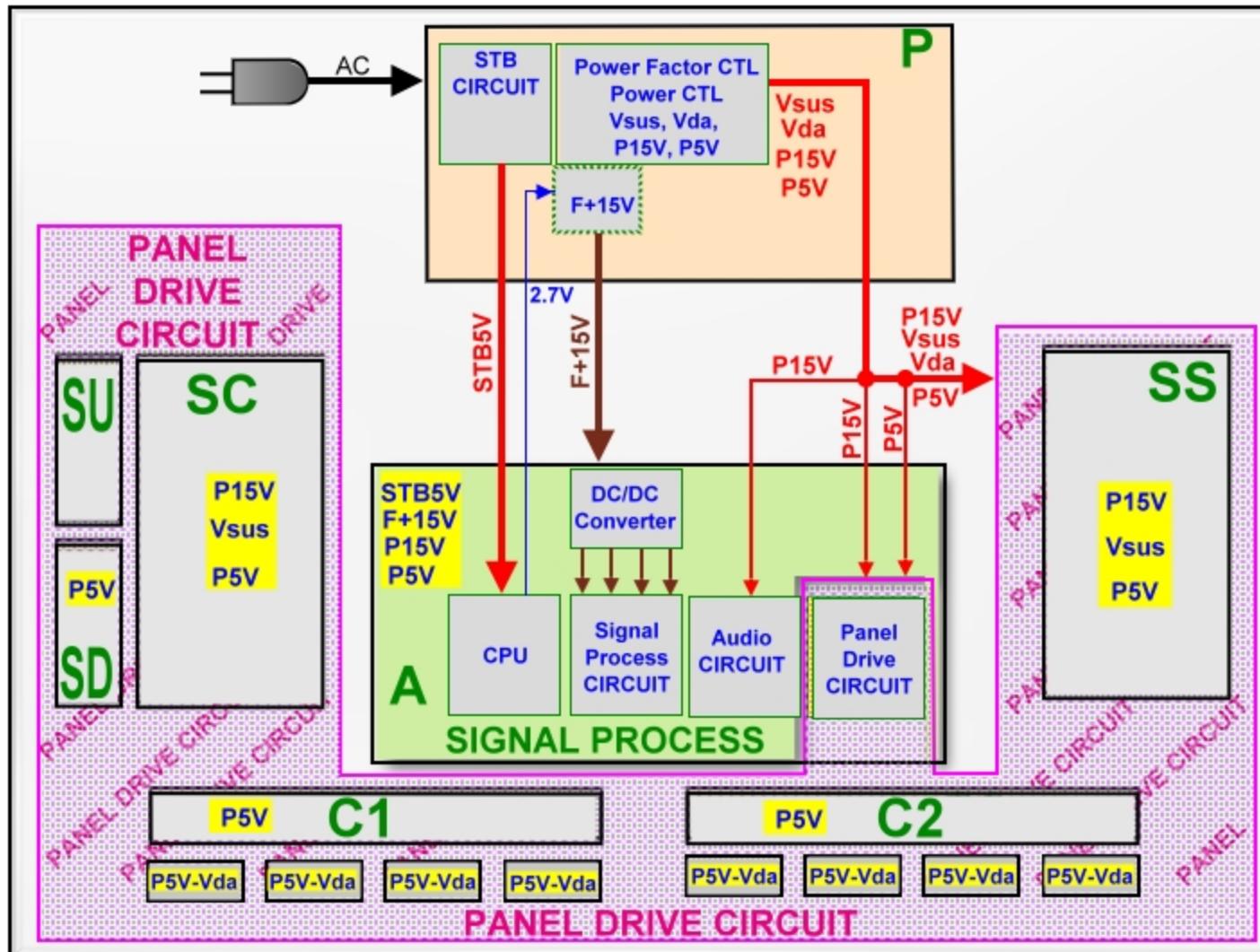
The PDP TV consists of several circuits.

The Power Supply:

This circuit provides the voltages necessary to drive all the circuits in the TV.

Signal Processing/CPU:

This circuit is designed to perform all the functions necessary to process any input signal.

The CPU provides commands to turn on the TV. It communicates with other components on the TV via the bus line. It also provides protection by monitoring the supply voltages for abnormalities.

Panel Drive Circuit:

This circuit provides the control drive pulses to the drive circuit boards to drive the panel.

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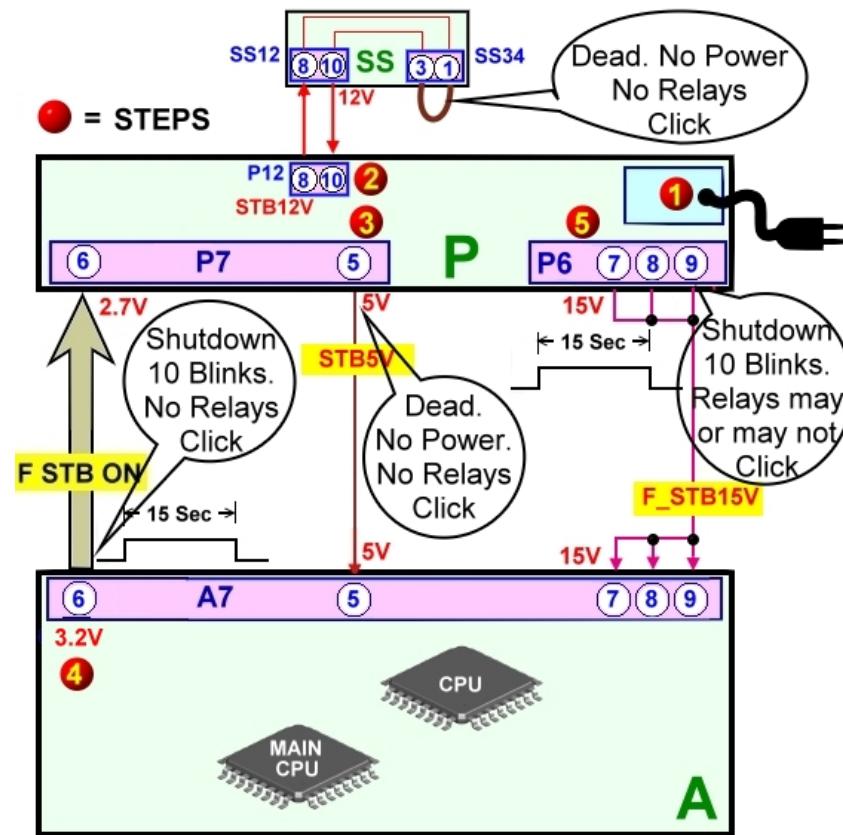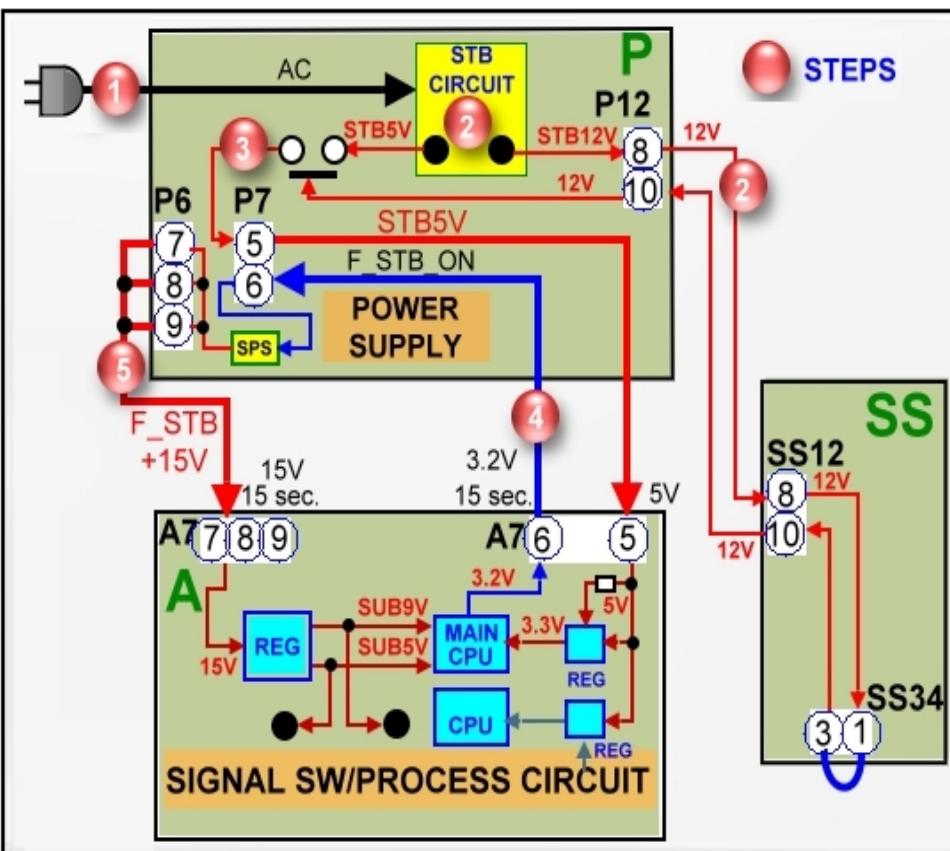
Standby Operation

When the TV is plugged in:

AC is applied to the standby circuit in the power supply to produce STB12V and STB5V.

The STB12V is routed thru the SS board and it's returned back to the P board to turn on a switching circuit that outputs the STB5V. If the STB5V is missing, the TV is dead (No power)

The STB5V is output from the P board at pin 5 of connector P7 and it is applied to pin 5 of connector A7 on the A board.

The STB5V is applied to a 3.3V regulator to power the Main CPU (IC1100) on the A board.

When the Main CPU (IC1100) receives 3.3V, it outputs a temporary 2.7V/3.2V command that is provided to pin 6 of connector P7 on the P board. The function of this command is to turn on the circuit that generates the "F+15V" in the P board.

The P board outputs the F+15V to pins 7, 8, and 9 of connector A7 in the A board. This voltage is applied to a regulator circuit that generates: SUB9V, SUB5V, and SUB3.V.
If any of these voltages (F+15V, SUB9V, SUB5V, and SUB3.3V) are missing, the TV shuts down and the power LED blinks 10 times.

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Connectors Location on the P board (TH-42PX80U)
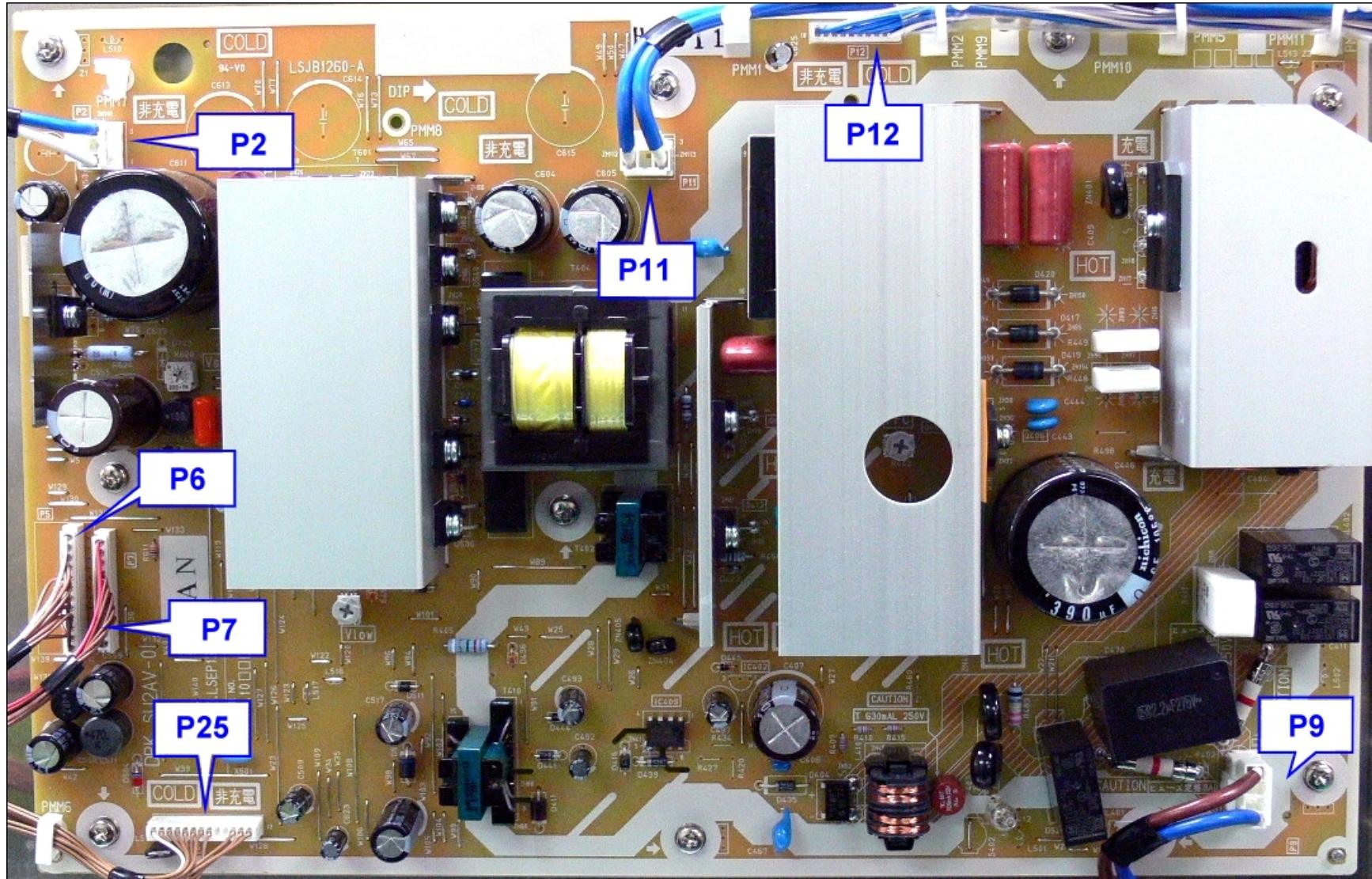
This picture shows the location of the connectors on the P board

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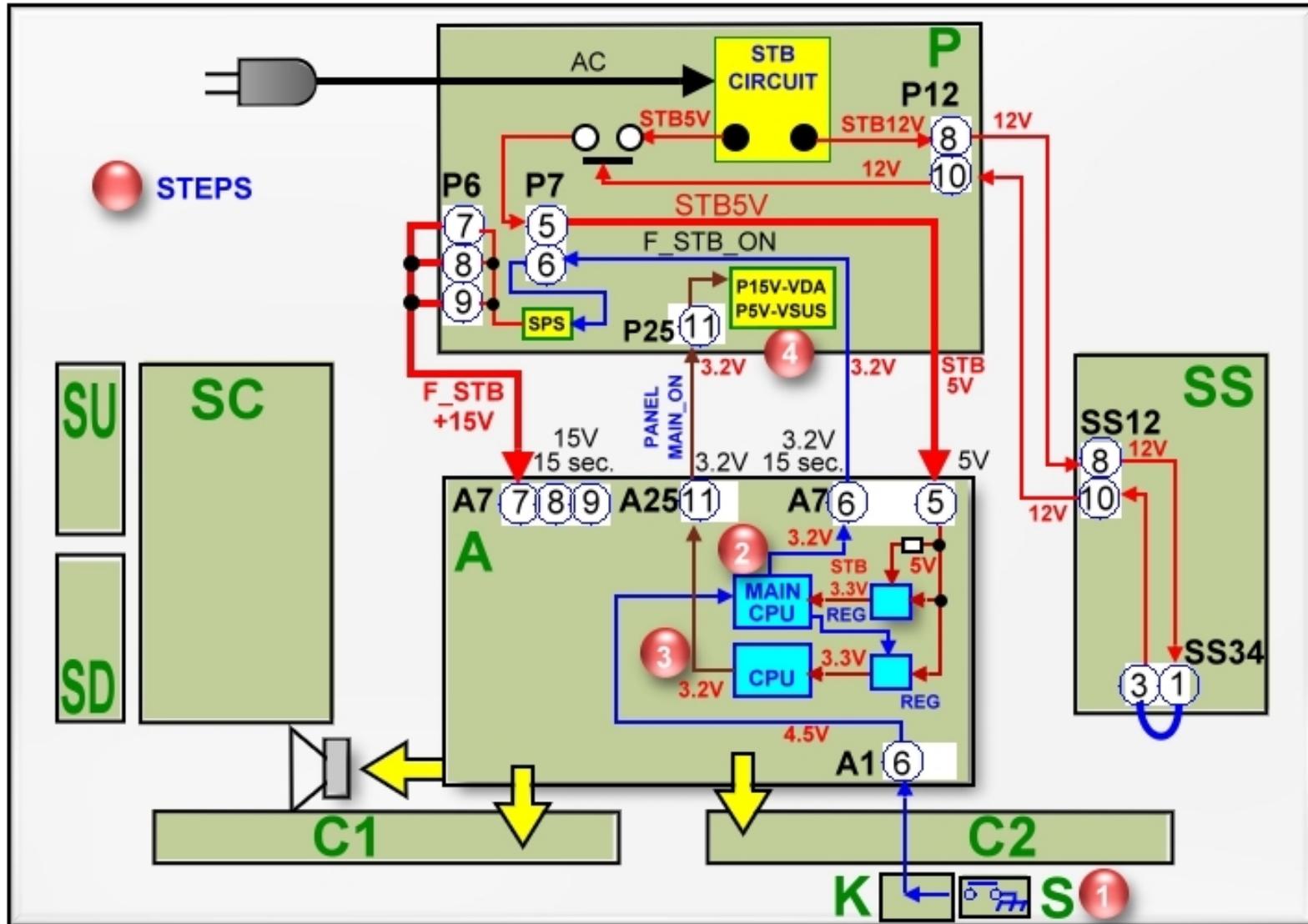
Power On Circuit Explanation

1. The power command from the power switch on the S board or the remote control receiver on the K board is provided to the Main CPU on the A board thru connector A1. The CPU on the A board outputs the "F_STB_ON" Command and the PANEL_STB_ON" command.

2. The "F_STB_ON" command is provided to pin 6 of connector P7 of the power supply to develop the F_STB+15V.

3. The "PANEL_STB_ON" is used to turn on the STB3.3V regulator on the A board. The output voltage is applied to the "Panel" CPU on the A board (Formerly located in the D board).

4. When the "Panel" CPU on the A board is energized, it outputs the "PANEL_MAIN_ON" Command (3.2V) to pin 11 of connector P25 on the P board.
    The PANEL MAIN ON command turns on the power supply circuit that outputs the Vsus, Vda, 15V, and 5V.

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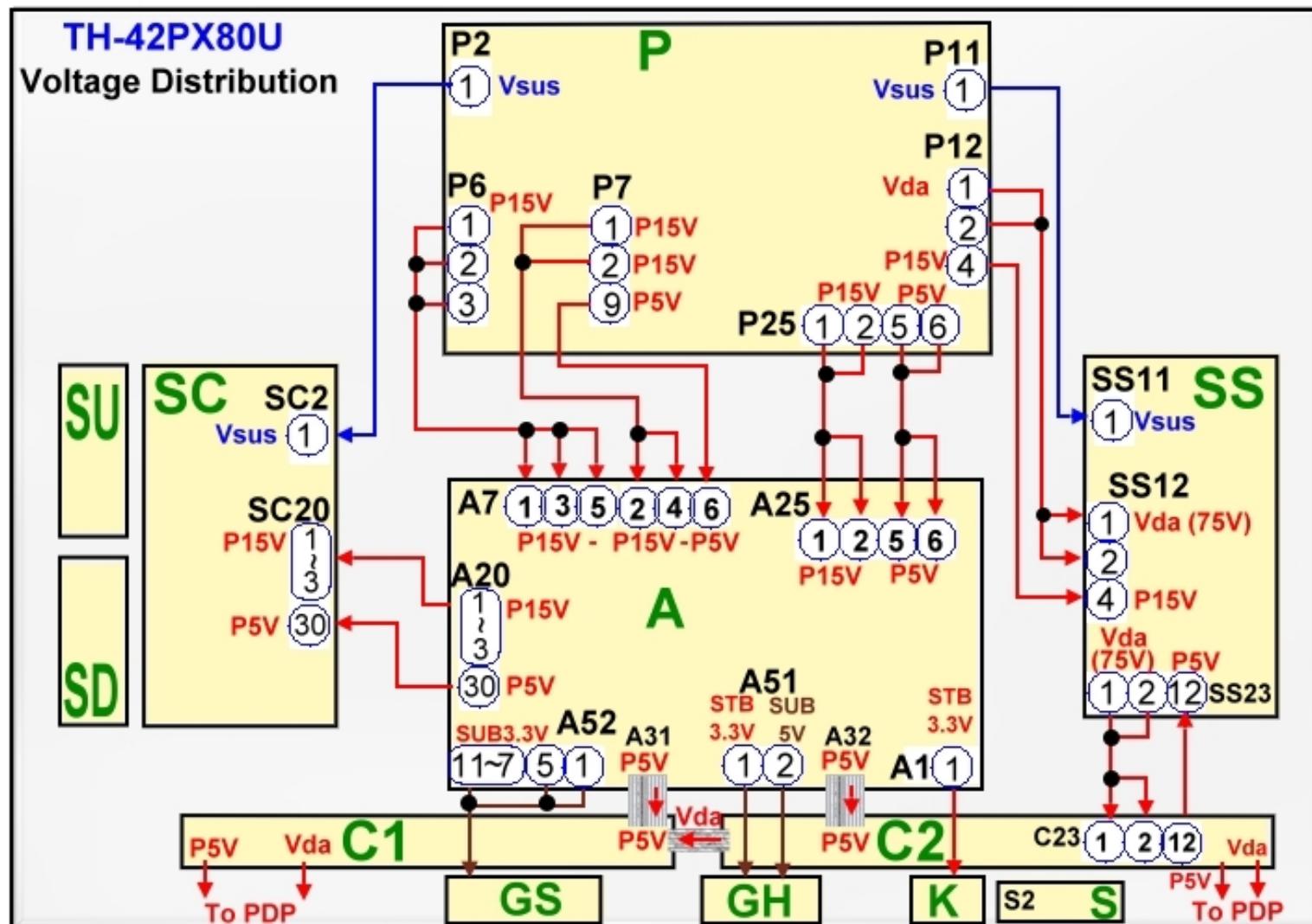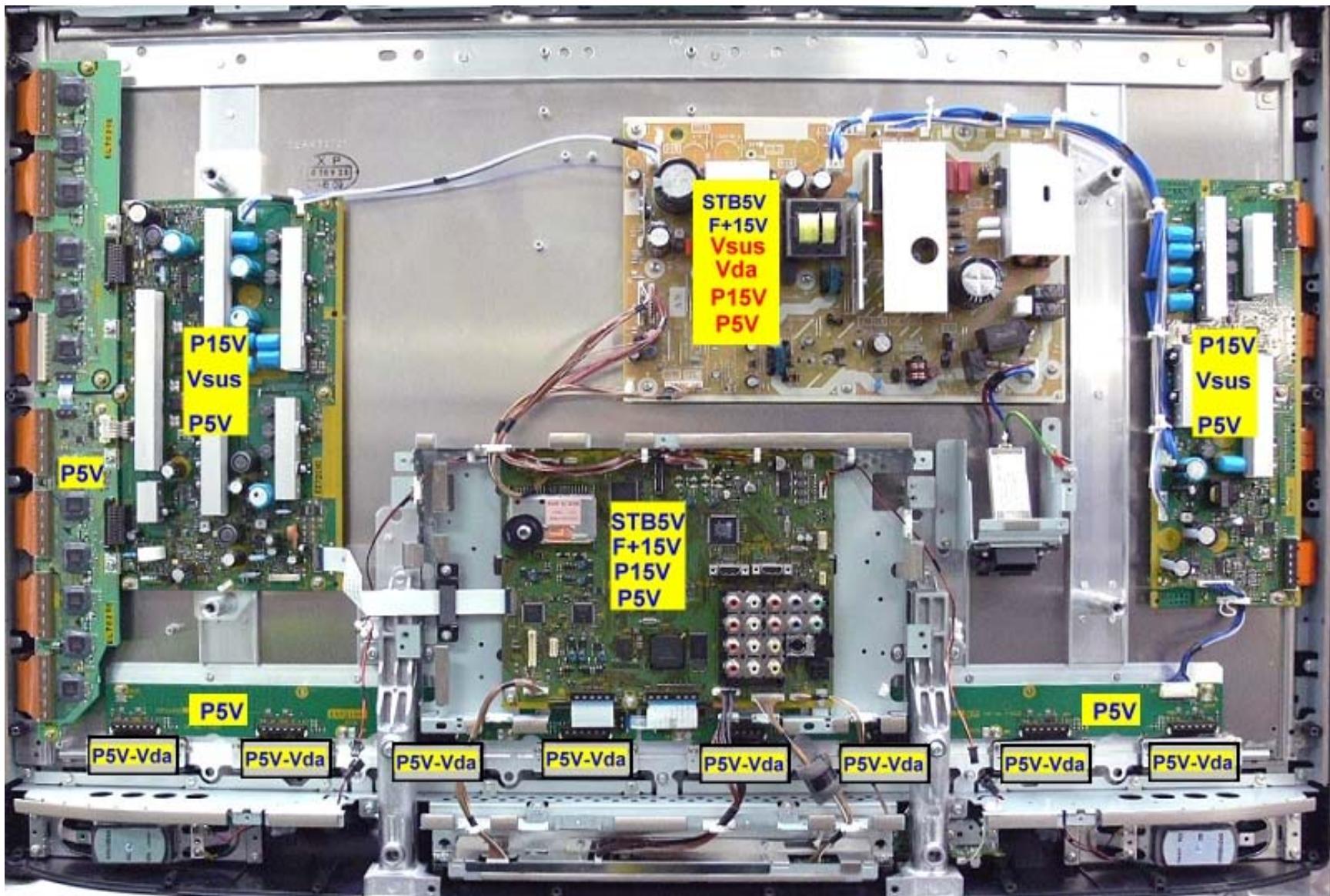
Because of the similarities between the TH-XXPX80U, the TH-XXPZ80U, and TH-XXPZ85U, from this point forward, the material used in the guide is based on the TH-XXPZ85U.

TH-XXPZ80U and TH-XXPZ85U

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Boards Name and Function (TH-XXPZ80U/PZ85U)

Board Name	Function	Board Name	Function
P	Power Supply	D	Format Converter, Plasma AI, Sub-Field Processor
PB	Fan control	C1	Data Driver (Upper Right)
A	Speaker out, Sound Processor AV Terminal, AV Switch		
		C2	Data Driver (Upper Left)
	DC-DC Converter Digital Signal Processor, Microcomputer HDMI Interface, Peaks Lite 2, Full HD		
		SC	Scan Drive
G	Front terminal, AV3, Key Switch	SU	Scan out (Upper)
K	Remote receiver, Power LED	SD	Scan out (Lower)
S	Power Switch	SS	Sustain Drive
GS	SD Card Slot		
GH	HDMI3 in		

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Board Layout

Panasonic has been using single scan addressing in our standard definition (SD) Plasma TVs for a while now.

In 2006 (9th generation), Panasonic started using single scan addressing in our 42" HD models.

In 2007 (10th generation), the 50" HD models were added to the list of TV using single scan addressing.

For 2008 (11th generation), the 42" and 50" **(Not yet confirmed in 58" and 65")** Full HD models (PZ80, PZ85, and PZ800 **(Not yet confirmed in PZ850)** were also added to the list.

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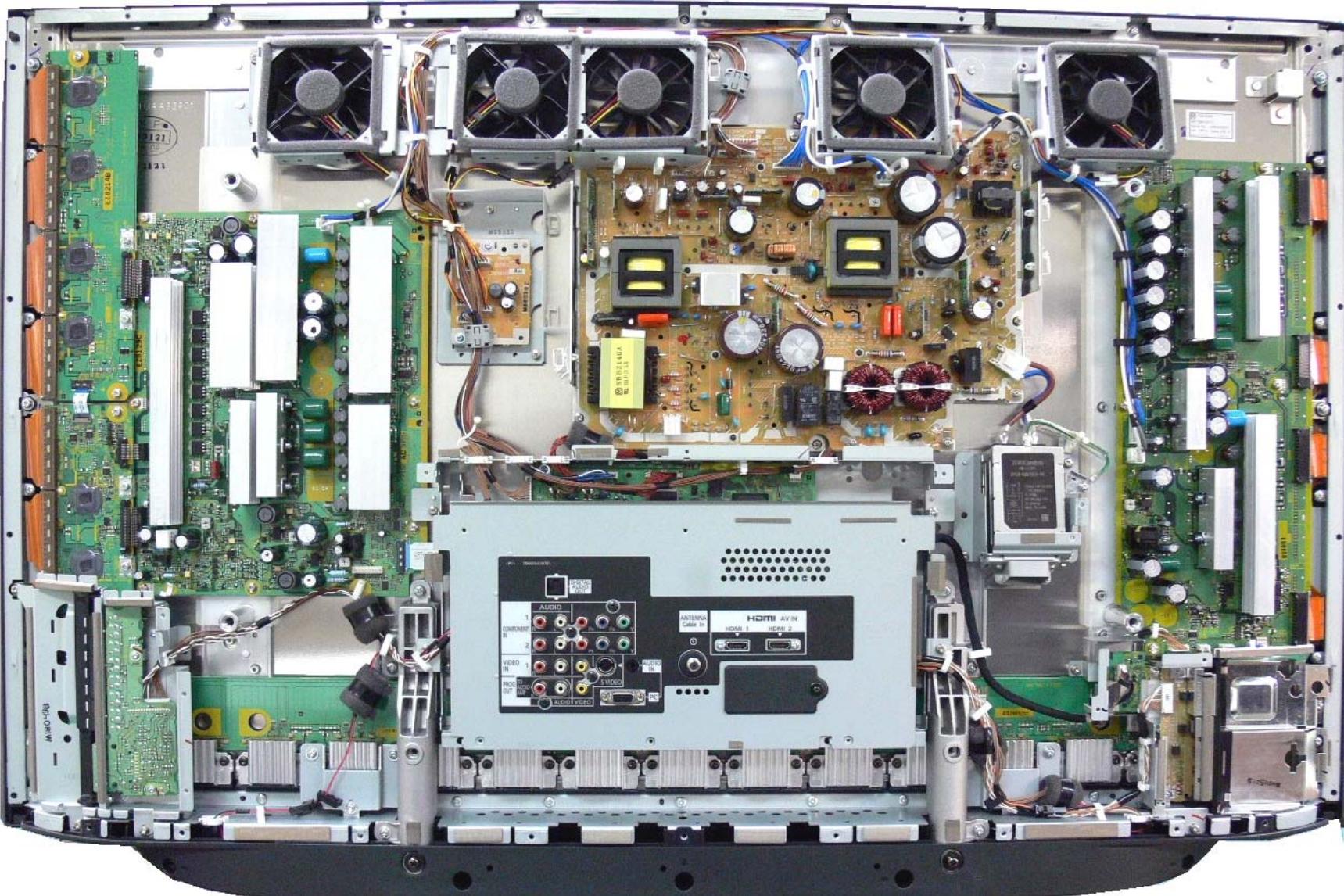
TH-42PZ85U

This is a picture of the TV with the rear cover removed

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TH-42PZ85U Pictorial Boards Layout
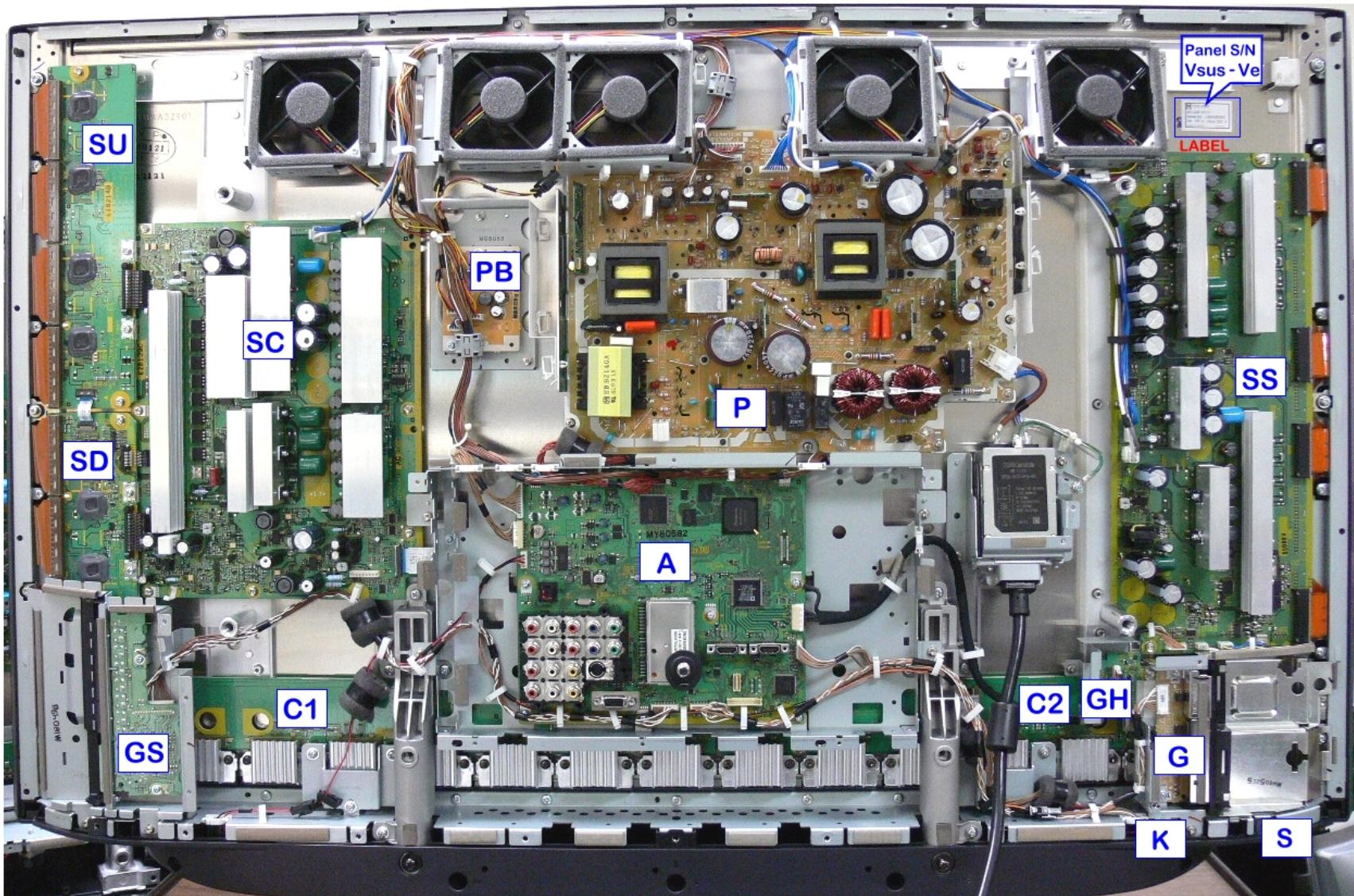
In this line of Full HD Plasma TVs, the number of boards used have been reduced.
Both the DG board and the H board are no longer used. The circuits found in these boards are now part of the A board.

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TH-42PZ85U Connectors Location
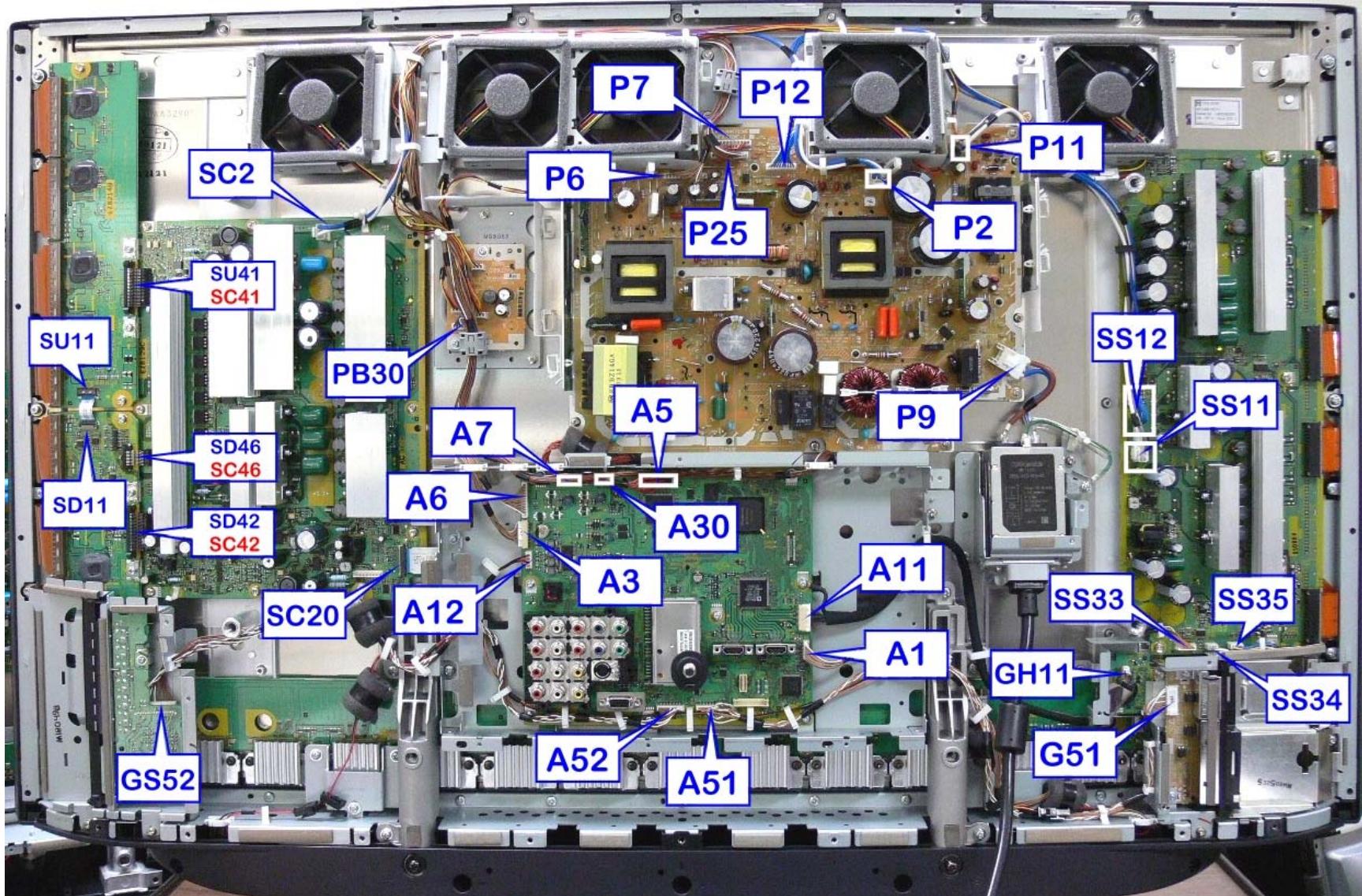
This picture shows the location of all the connectors in the TV.

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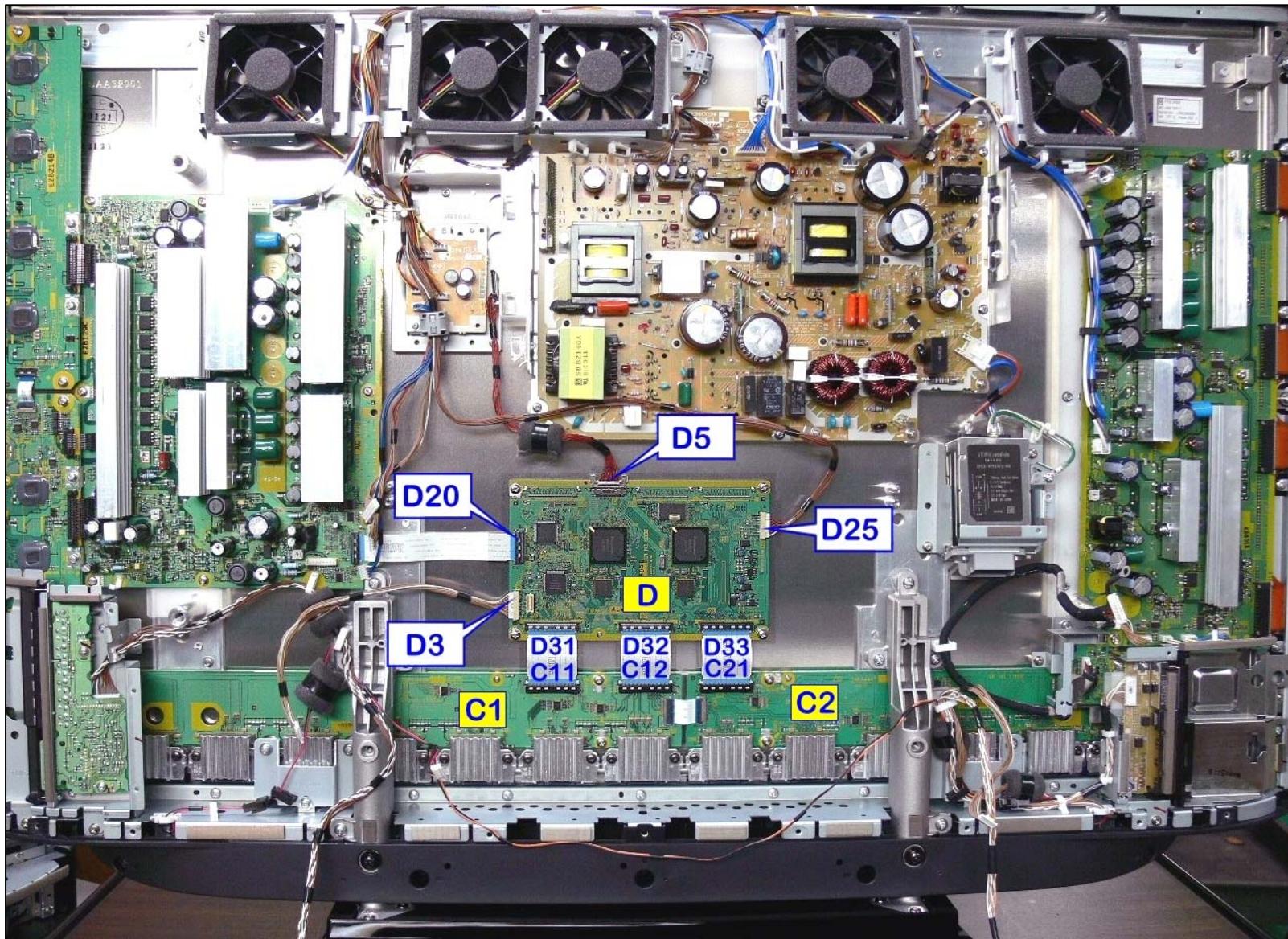
This picture shows the location of the D board and its connectors.

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Start-up Process

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Start-up Process

Upon connecting the Panasonic Plasma Display Television to the AC line, the sound of relays being triggered can be heard from the Power Supply board. Also a red light from the Optical jack on the back of the TV can be observed.

Approximately 15 seconds later, the click sound from the relays can be heard again and the red LED inside the Optical jack turns off.

This condition is normal and by paying attention to this sequence of events, we can confirm the operation of several circuits inside the TV.

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TH-42PZ85U

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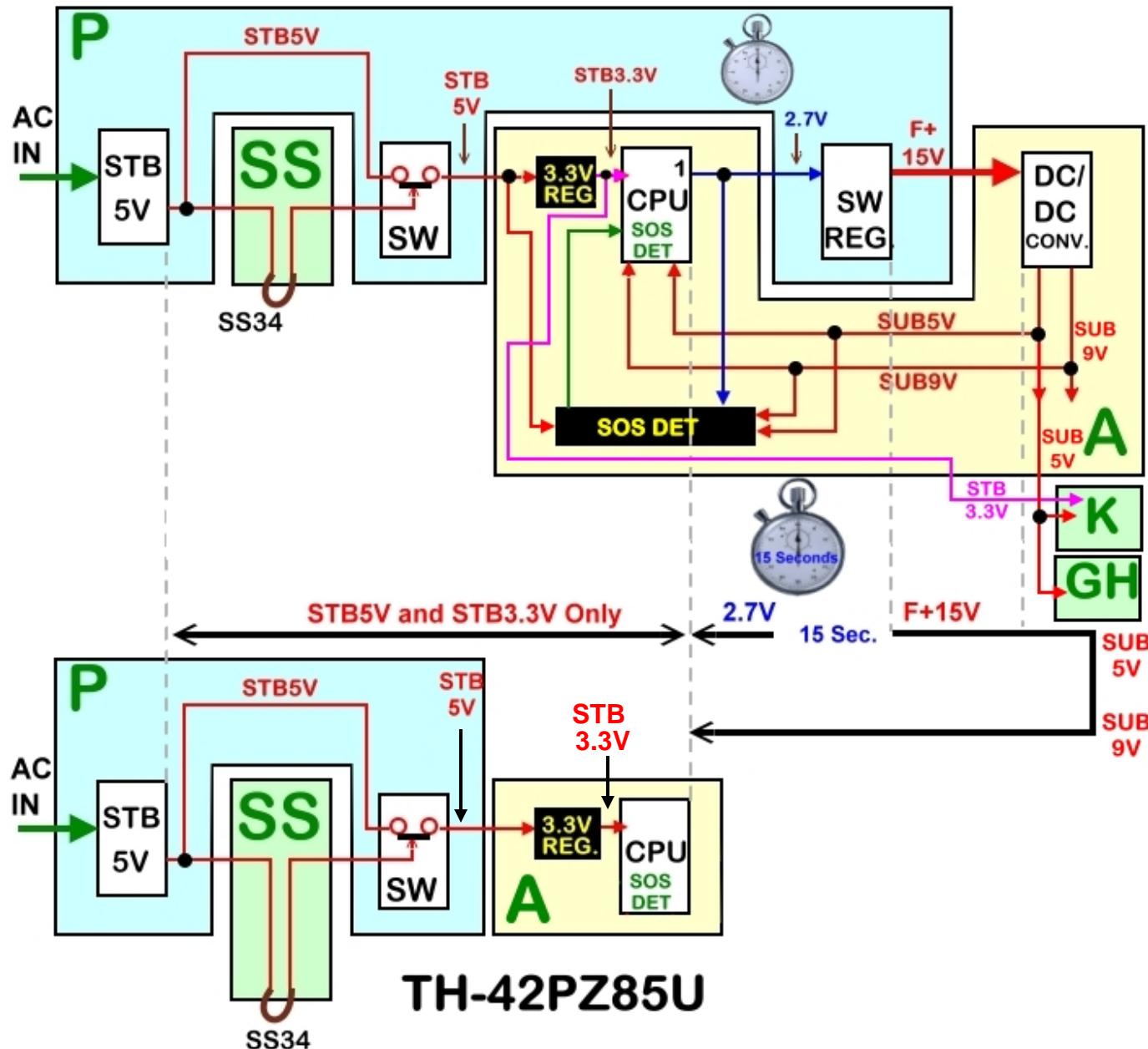
Start up Process Description

When the TV is plugged in:
AC is applied to the power supply board (P) through connector P9. The AC
is applied to the standby circuit to produce STB12V and STB5V.

The STB5V is routed thru the SS board to turn on a circuit which function is to allow the
output of the STB5V through connector P7.

The STB5V is output from the P board at pin 5 of connector P7 and it is applied to pin 5 of
connector A7 on the A board.

The STB5V is applied to a 3.3V regulator to power the Main CPU (IC1100) on the A board.
The 3.3V becomes STB3.3V.

The STB3.3V is applied to the power LED and the remote control receiver in the K board.

When the Main CPU (IC1100) receives 3.3V, it outputs a 2.7V command that is provided to the
P board and the SOS Detect circuit within the A board. This command only lasts approximately
15 seconds and it is called "F-STB-ON". The function of this command is to turn on the circuit
that generates the "F-STB-14V" in the P board.

The function of the 2.7V command applied to the SOS Detect circuit in the A board together
with the STB5V, is to activate the "SOS DETECT" circuit in the A board.

The F+15V from connector P6 on the P board is applied to connector A6 in the A board. This
voltage is applied to a regulator circuit that generates: SUB9V, SUB5V, and SUB3.V.

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Start-up Process (Detailed Circuit)

This is a detailed block diagram of the start up process

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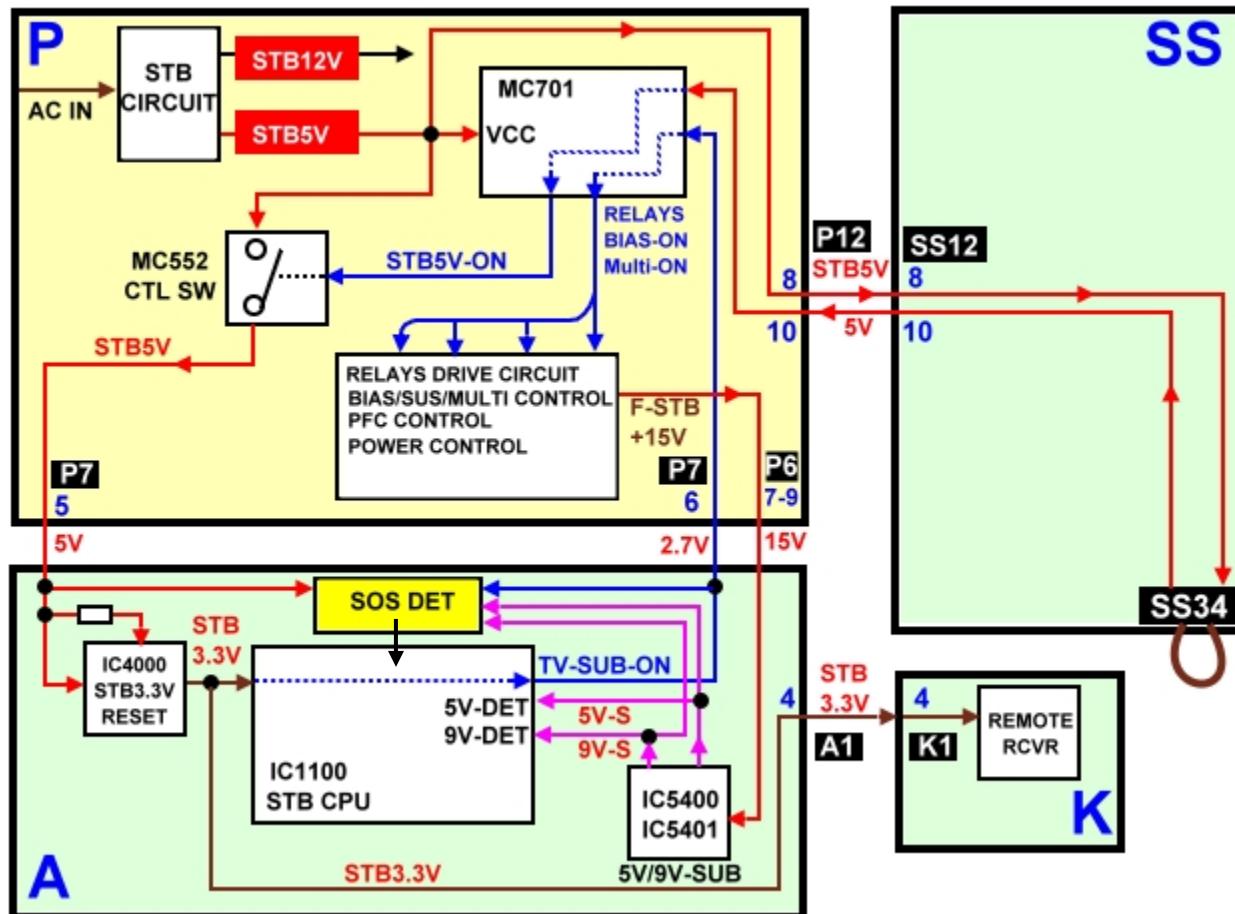
Start-up Process Explanation

When AC is applied to the TV, the Standby circuit outputs 5Vdc and 12Vdc. The 5V is applied to the Power CPU and a switching IC MC552 on the power supply circuit. The 5V is also provided to the SS board.
A jumper at connector SS34 of the SS board routes the 5V back into the power supply board to turn on the switching circuit inside the CPU MC701. When this circuit is on, MC552 turns on and the STB5V is output to the A and D boards.
The STB5V is output to the A Boards thru pin 5 of connector P7.
The STB5V is applied to a 3.3V regulator (IC4000) on the A board to provide the supply voltage (STB3.3V) to the Main CPU (IC1100).

The STB3.3V is also applied the Remote Control receiver and the power LED on the K board.

When the Main CPU IC1100 on the A board receives the 3.3V, it outputs the SUB_ON/TUNER_SUB_ON command (2.7V) to the Power MCU (MC701) located on the Power Supply board.

The power supply MCU outputs commands to turn on the circuits necessary to generate the F+15V.

The F+15V from the P board is applied to the 5V/9V regulators, IC5400 and IC5401on the A board. The voltage outputs from these ICs are called SUB5V and SUB9V and are used by various circuits on the A board.
To avoid catastrophic failures, they are monitored by an SOS Detect circuit for over-voltage and over-current conditions.
This SOS Detect circuit is controlled by the TUNER_SUB_ON command from the Main CPU (IC1100).
The SUB5V and SUB9V from IC5400 and IC5401 are connected to the CPU for voltage presence detection.

Any abnormalities of the SUB5V or SUB9V triggers the SOS circuit. The TV shuts down and the power LED blinks 10 times. This happens while the TV is off (Before turning on the power).

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SUB-VOLTAGES

P	
P6	
7-8-9	FSTB15V

A	
A6	
7-8-9	FSTB15V
A1	
1	+5V (SUB)
A52	
2	+3.3V(SUB)
A11	
22	+5V (SUB)
18-20	+3.3V(SUB)

K	
A1	
1	+5V (SUB)

GS	
GS52	
2	+3.3V(SUB)

GH	
GH11	
22	+5V (SUB)
18-20	+3.3V(SUB)

Color	Voltage
Yellow	+5V (SUB)
Red	FSTB15V
Green	+3.3V(SUB)

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Sub-Voltages Distribution

- The F+15V from the P board is the source that supplies the DC-DC converter (IC5400 and IC5401) in the A board. The A board outputs 9V, 5V, and 3.3V.
- The 9V is only used by the A board.
- The 5V, besides being used in the A board, is also distributed to the K and GH boards.
- The 3.3V is used in the A board and it's also provided to the GH and GS boards.
- A 10 blinks code from the power LED indicates abnormalities on any of these voltages.
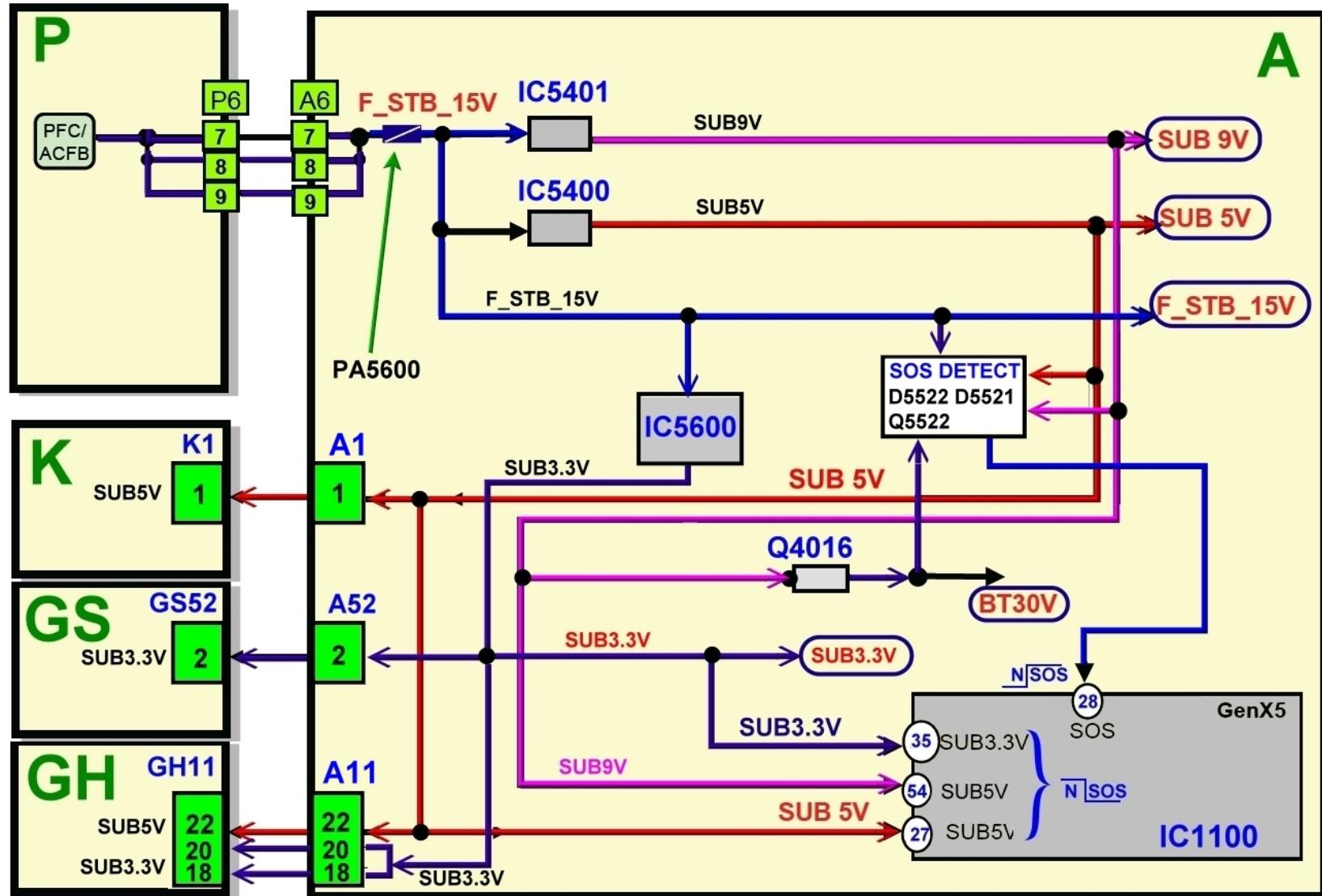
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These 3 conditions can cause the TV to shutdown and the power LED to blink 10 times

1. Missing/Shorted F_STB_15V

2. Missing/Shorted SUB9V, SUB5V, and SUB3.3V

3. Wrong diagnostic by the A board

Note: When taking voltage reading, place the voltmeter probe at the test point, component, or connector's pin indicated before connecting the TV to the AC line. This will ensure voltage reading accuracy before the TV shuts down.

To troubleshoot a PDP TV that is shutting down and the power LED blinks 10 times:

- Find out if 15V is output at pin 7,8,or 9 of connector P6 of the P board. If no voltage is output, the P board may be defective.

- If the F_STB_15V voltage is OK, it's likely that the A board is defective.

- Since some of the Sub-voltages generated by the A board are connected to the K, GS, and GH boards, it's also likely that one of these board may cause the unit to shut down and the power LED to blink 10 times.

- Disconnect connector A1/K1 to isolate the K board.

- Disconnect connector A/52GS52 to isolate the GS board.

- Disconnect connector A11/GH11 to isolate the GH board.

- The defective board is found when the connector that provides the Sub-voltages to that board is removed and the TV no longer shuts down.

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Power On Operation

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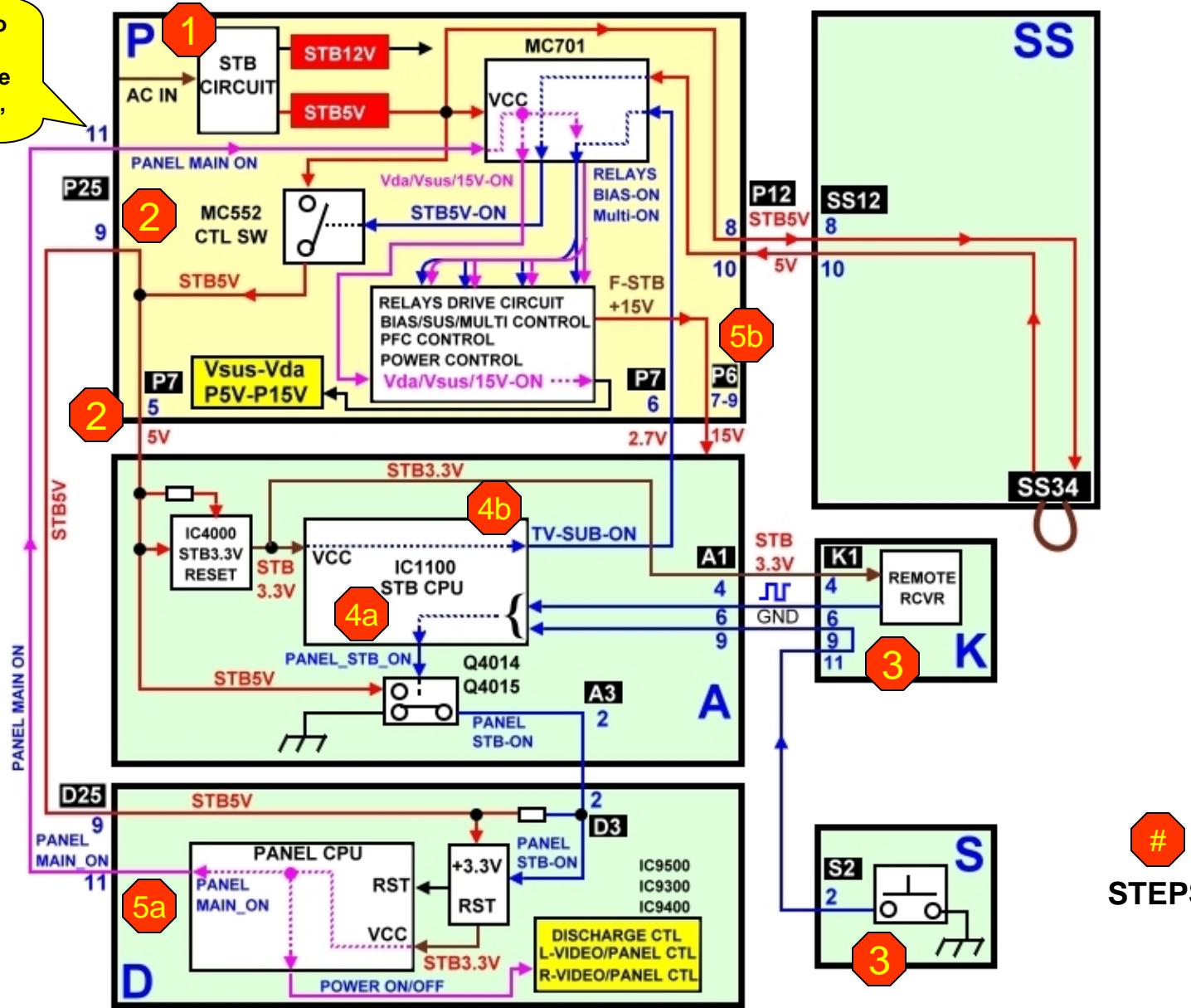
The Power On Circuit Explanation

The power command from the power switch on the S board or the remote control receiver on the K board is provided to the CPU in the A board.

The CPU on the A board outputs the "PANEL_STB_ON" command and the "F_STB_ON" command.

The "PANEL_STB_ON" is provided to the D board to turn on the STB3.3V regulator. The output voltage is applied to the CPU in the D board.

The "F_STB_ON" command is provided to the power supply to develop the F_STB+15V.

When the CPU on the D board is energized, it outputs the "PANEL_MAIN_ON" and the "POWER ON/OFF Commands.
The PANEL MAIN ON command turns on the power supply circuit that outputs the Vsus, Vda, 15V, and 5V.

The POWER ON/OFF command turns on the Video/Panel Control and the Discharge Control circuits in the D board.

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TH-42PZ85U

Color	Voltage
Yellow	STB5V-STV12V
Orange	F_STB15V
Red	5V(P) (P5V)
Green	15V(P) (P15V)
Violet	Vda
Blue	Vsus

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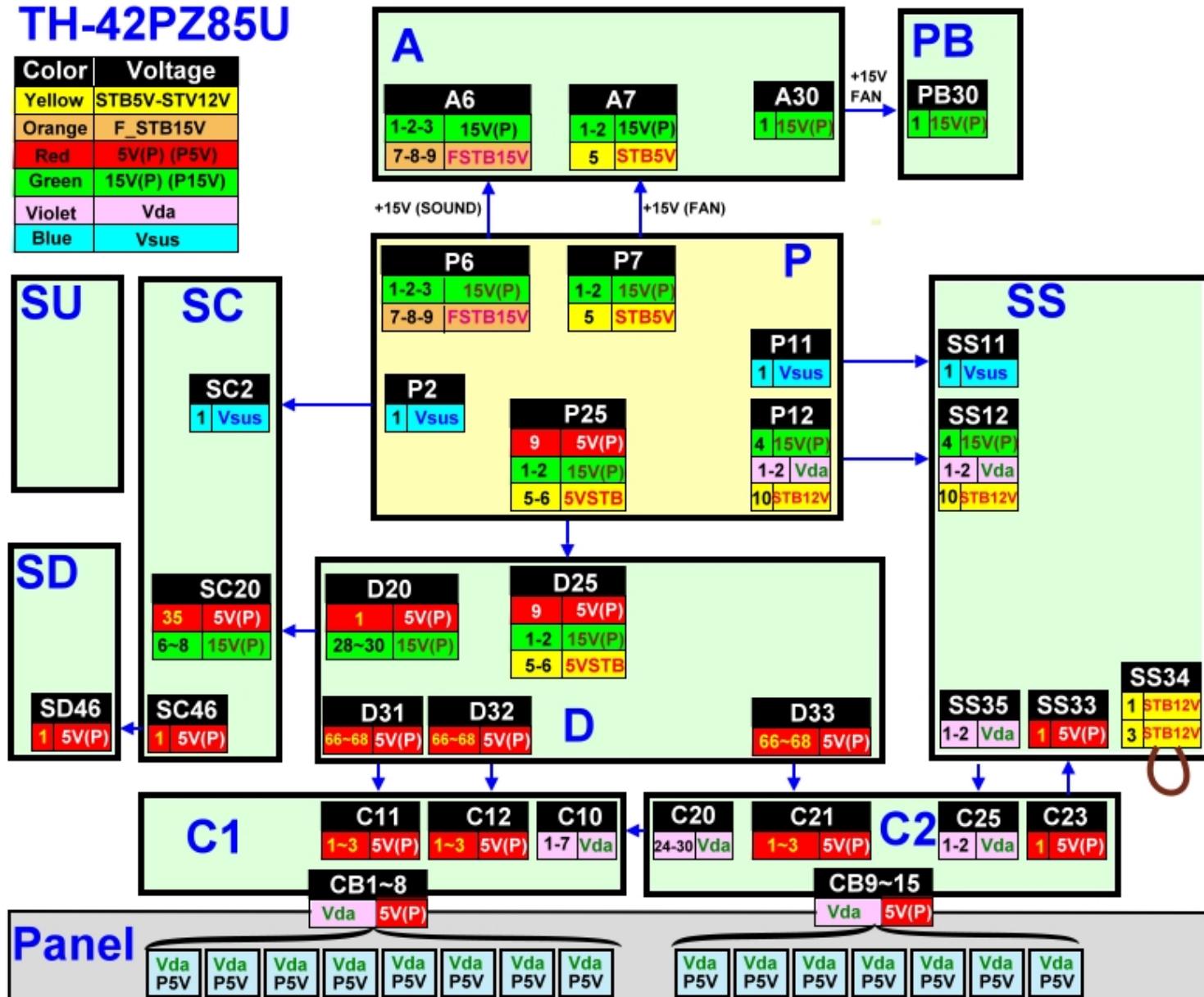
Troubleshooting 10 blinks Condition At Power On

These 5 conditions can cause the TV to shutdown and the power LED to blink 10 times

1. Missing/Shorted F_STB_15V

2. Shorted P15V

3. Missing/Shorted SUB9V, SUB5V, and SUB3.3V

4. Missing Vda (Shorted Vda causes 5 blinks)

5. Wrong diagnostic by the A board

Note: The P15V and the F_STB_15V are created by the same circuit in the power supply circuit. A shorted P15V, normally causes the TV to shut down and the power LED to blink 2 times.

Sometimes a shorted P15V affects the F_STB_15V and this causes the TV to shutdown making the power LED blink 10 times.

To troubleshoot a PDP TV that is shutting down and the power LED blinks 10 times:

- Isolate the SC and the SS boards (They may cause a 10 blinks shutdown). Disconnecting P6 and P7 allows for only the panel drive section to be driven. If the LED on the SS board and the LED on the SC board are lid, then the SS and the SC boards are OK and the A board is suspected to be defective

- If the LEDs on the SS and SC boards are not lid, then isolate them one at time.

- If the SS and SC boards are OK, then the P board may be defective.

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Circuit Operation When Connectors A6 and A7 are Removed

3.2V is needed to turn on the P board to generate Vsus, Vda, F_STB15V, P15V, and P5V

If STB5V is not provided to the A board, the CPU is disabled

2.7V is needed to turn on the P board to generate just the F_STB15V
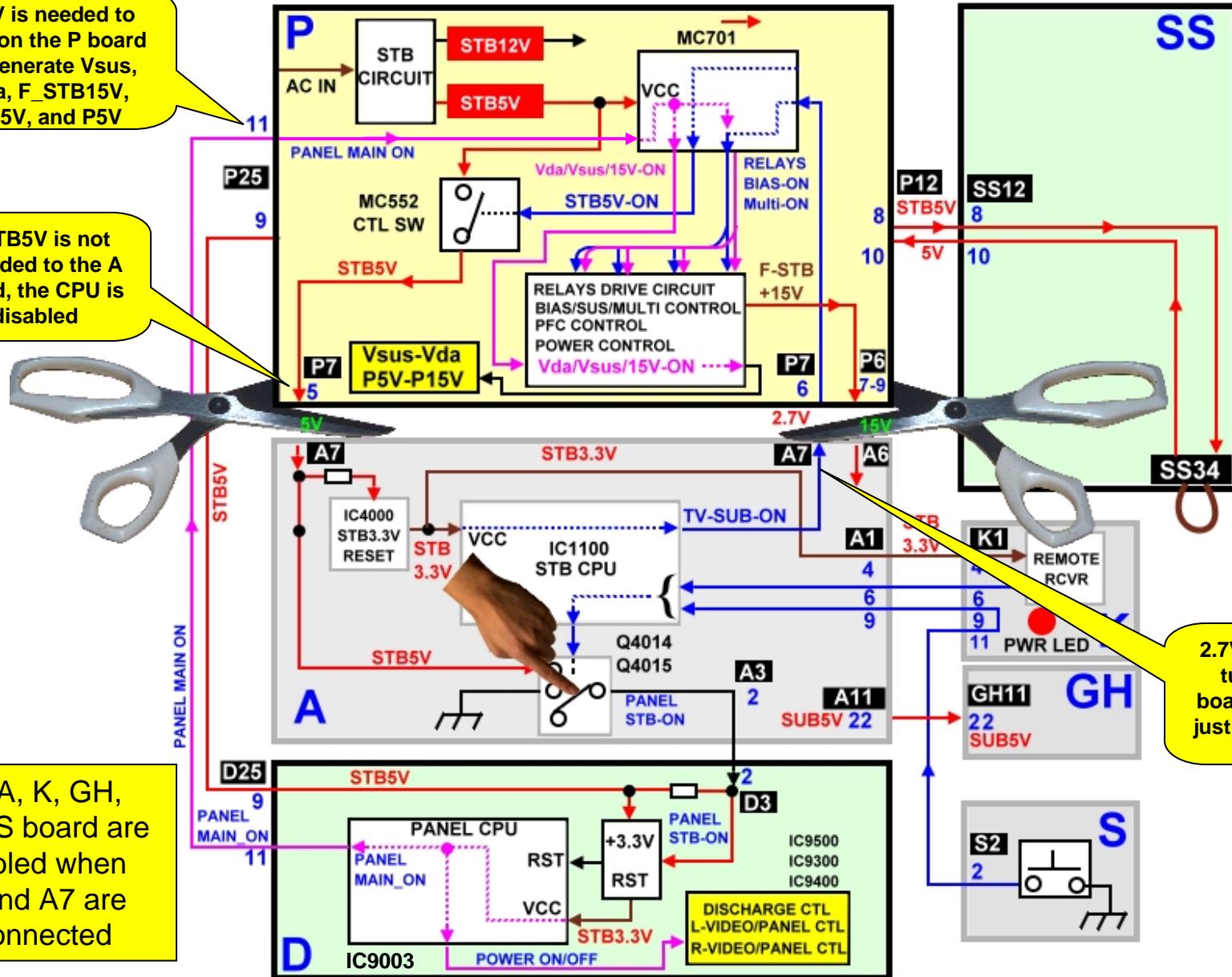
The A, K, GH, and S board are disabled when A6 and A7 are disconnected

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Circuit Operation When A6 and A7 are Removed

The result obtained on previous generations when D3 was disconnected, can now be obtained by disconnecting A6/P6 and A7/P7.

When these connectors are removed, the A, K, GH, and S boards are disabled.

Normally Pin 2 of connector A3 is grounded by Q4014-Q4015. When A6 and A7 are disconnected pin 2 is no longer grounded. This allows for the 3.3V regulator on the D board to output 3.3V to the Panel CPU (IC9003).

The Panel CPU (IC9003) outputs a command that is provided to 2 different circuits.

The "Panel Main On" command (3.2V) is connected to pin 11 of connector P25 on the power supply turning on the circuit that generates Vsus, Vda, P15V, and P5V.

The "Power On/Off" command (3.2) is connected to the Video/Panel Control and Discharge circuit to output the panel drive control pulses.

This method of isolation is useful when troubleshooting problems where the A, GH, K, or S board are suspected to be defective.

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Connector A6 and A7 location

It may not be necessary to remove the metal plate in front of the input jacks when disconnecting connectors A6 and A7. To remove the metal plate in front of the input jacks, remove the 6 screws shown on Figure 1.

Figure 1

Figure 2

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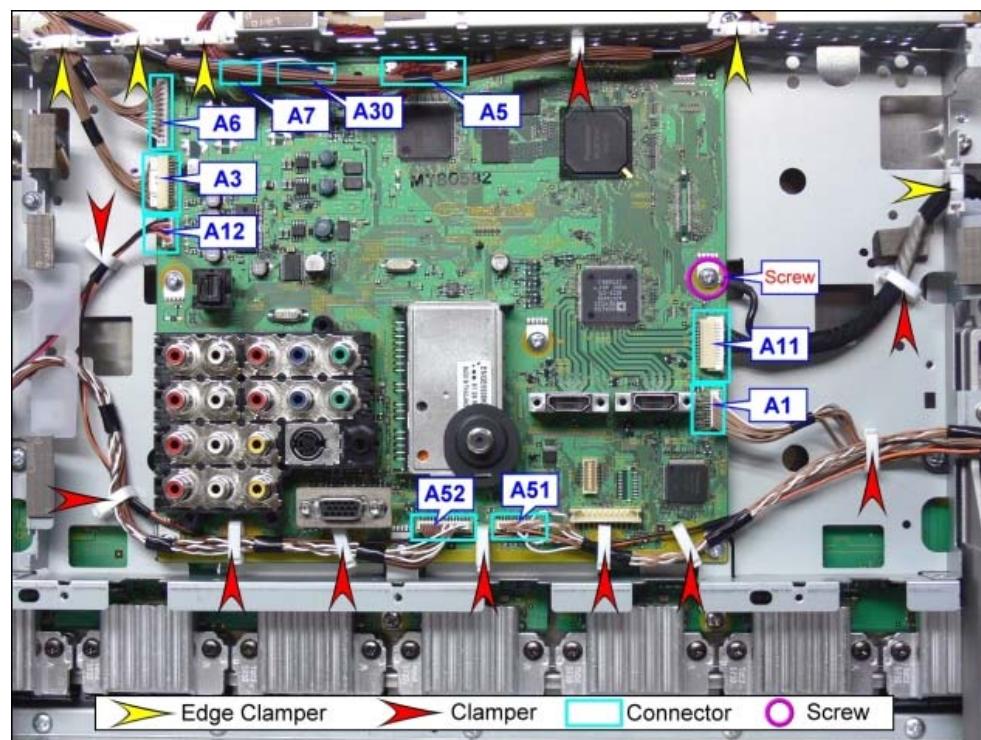
SOS DETECT (SHUTDOWN)

When an abnormality occurs in the unit, the "SOS Detect" circuit is triggered and the TV shuts down. The power LED on the front panel will flash a pattern indicating the circuit that has failed.

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Power LED Blinking timing chart

Number of blinks	Contents	Check point
1	Communication Error with Microcomputer	D, A
2	15V SOS	D
3	3.3V SOS	D
4	Power Supply SOS	P
5	5V SOS	D
6	SC Energy recovery SOS	SC, SU, SD, D, P
7	SC floating voltage SOS	SC, SU, SD, D, P
8	SS Energy recovery SOS	SS, D, P
9	Panel Configuration SOS	D
10	Sub 5V SOS, Main 3.3V SOS, DTV9V SOS, Tuner SOS	A
12	Sound SOS	A
13	Communication Error with Peaks Lite-2	A

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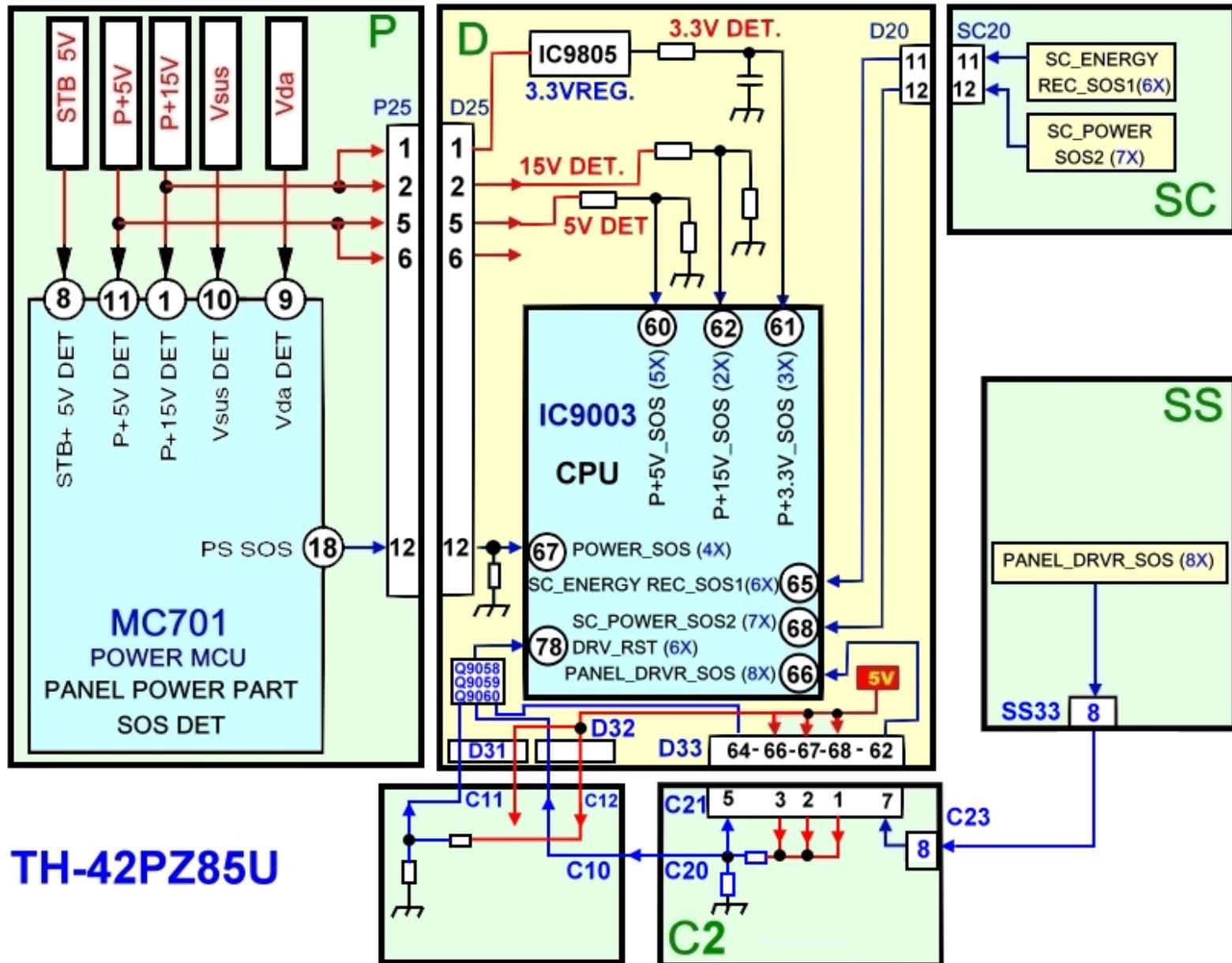
D board SOS Detect

- Protection circuits are incorporated in the unit to prevent the failure of a single circuit or component from creating catastrophic damage.

- A shutdown condition occurs when there is an over voltage, a short or a drop in any of the voltage lines. Also the shutdown circuit is triggered when the fans are drawing more current than normal.

- Normally the CPU of the D board and the CPU of the A board detect when a shutdown condition has been triggered.

- When an abnormality has occurred, the unit protection circuit operates and the TV is reset to the stand-by mode. At this time, the defective block can be identified by the number of blinks of the POWER LED on the front of the unit.

- IC9003 of the D board detects conditions that make the power LED blinks 2, 3, 4, 5, 6, 7, 8, or 9 times.

- The following table identifies the areas where a problem is suspected according to the number of times that the POWER LED blinks.

- **2 Blinks SOS:** Pin 62 of the CPU IC9003 monitors the 15V line. During normal operation pin 62 is kept high. If the 15V line is missing or shorted, a low is provided to pin 62. As a result, the unit shuts down and the power LED blinks 2 times.

- **3 Blinks SOS:** IC9805 is a 3.3V regulator located on the D board. Its output is monitored by IC9003. If the 3.3V is not present at pin 61, the CPU (IC9003) shuts down the unit. The power LED blinks 3 times.

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D board SOS Detect

- **4 Blinks SOS:** When an over voltage condition of the voltage lines from the power supply occurs, pin 18 of MC701 goes high. This high is provided to pin 67 of IC9003 of the D board triggering the "POWER SOS" circuit. When this happens, the TV shuts down and the power LED blinks 4 times. Primarily the P board causes 4 blinks, followed by the D board.

- **5 Blinks SOS:** Pin 60 of the CPU IC9003 monitors the 5V line. During normal operation, pin 60 is kept high. If the 5V line is missing or shorted, a low is provided to pin 60. As a result, the unit shuts down and the power LED blinks 5 times.

- **6 Blinks SOS:** Pin 65 of the CPU IC9003 monitors the status of the SC board. During normal operation, a low is applied to pin 65. If the SC board becomes defective, a high is provided to pin 65. As a result, the unit shuts down and the power LED blinks 6 times.

- **7 Blinks SOS:** Pin 68 of the CPU IC9003 monitors the status of the SC, SU, SD board. During normal operation, a low is applied to pin 76. If the SC, SU, or SD board becomes defective, a high is provided to pin 68. As a result, the unit shuts down and the power LED blinks 7 times.

- **8 Blinks SOS:** Pin 66 of the MPU IC9003 monitors the status of the SS board. During normal operation, pin 8 of connector SS33 outputs a low to pin 66. If the SS board becomes defective, a high is provided to pin 66. As a result, the unit shuts down and the power LED blinks 8 times.

Panasonic ideas for life

D board SOS Detect

- A defective D board may also be responsible for the 2, 3, 4, 5, 6, 7, 8, or 9 blinks of the power LED. A defective component on the D board may supply the MPU (IC9003) an erroneous input that causes the unit to shut down, with the power LED blinking a number of times.

Panasonic ideas for life

2 Blinks Error Code

These 3 conditions can cause the TV to shutdown and the power LED to blink 2 times

1. Missing P15V

2. A short of the P15V

3. Wrong diagnostic by the D board

P15V Distribution

Panasonic ideas for life
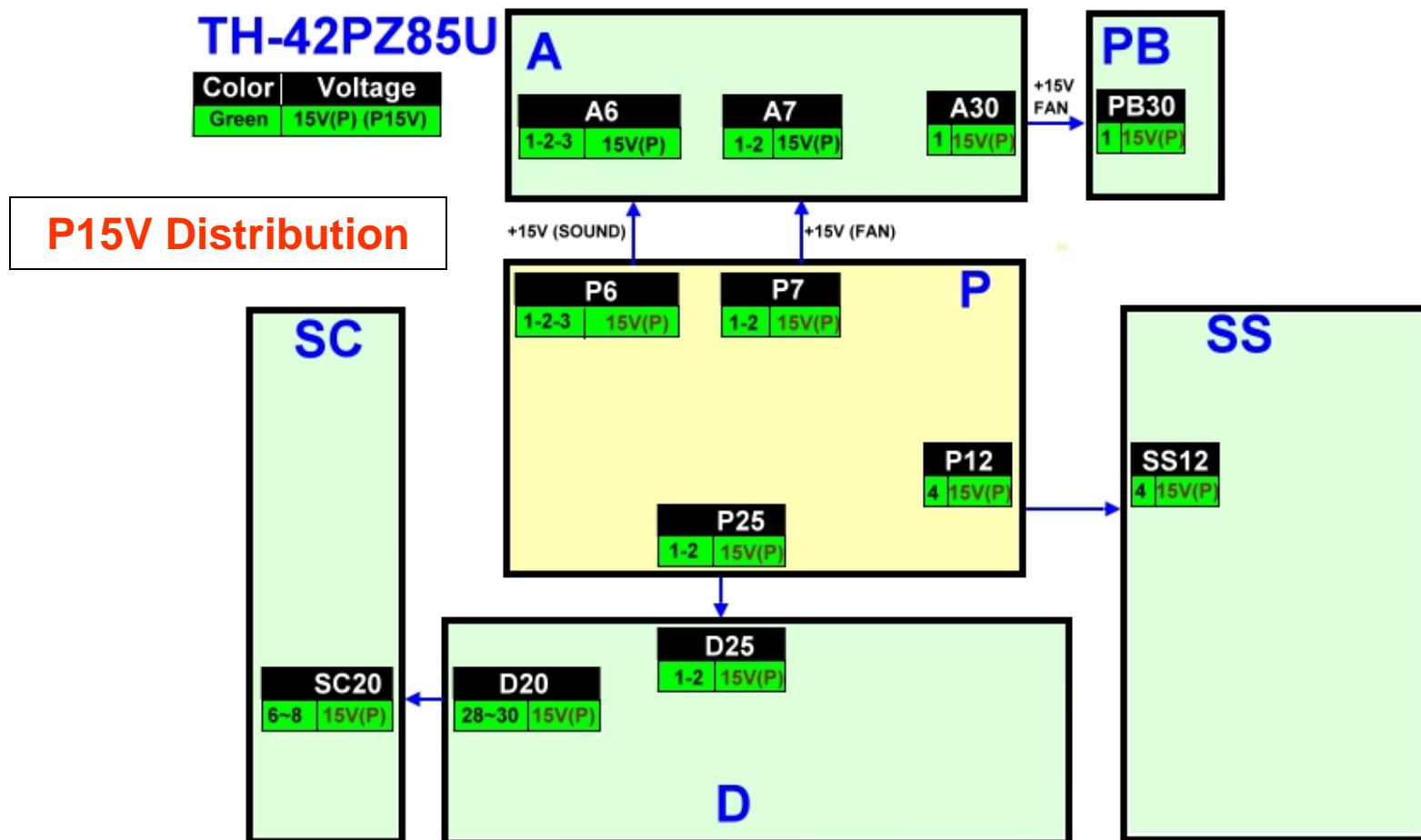
Troubleshooting 2 Blinks Error Code

When troubleshooting a PDP TV that is shutting down and the power LED blinks 2 times:

Find out if 15V is output at pin 1 of connector P7 of the P board.

If no voltage is output, measure resistance between pin 1 of connector P7 and ground (Chassis). If a shorted 15V is detected, find out if it's coming from the P board or if it's coming from any of the other boards that the 15V volt is connected to.

If the P board is OK, disconnect the connectors providing the P15V to all these boards while measuring resistance between pin 1 of connector P7 and ground.

The defective board is found when the connector that provides the P15V to that board is removed and the short circuit is no-longer present.

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Panasonic ideas for life

5 Blinks Error Code

These 4 conditions can cause the TV to shutdown and the power LED to blink 2 times

1. <u>Missing P5V</u>

2. <u>A short of the P5V</u>

3. <u>A short of the Vda line</u> (Note: missing Vda from the P board does not cause 5 blinks)

4. <u>Wrong diagnostic by the D board</u>

P5V and Vda Distribution

Panasonic ideas for life
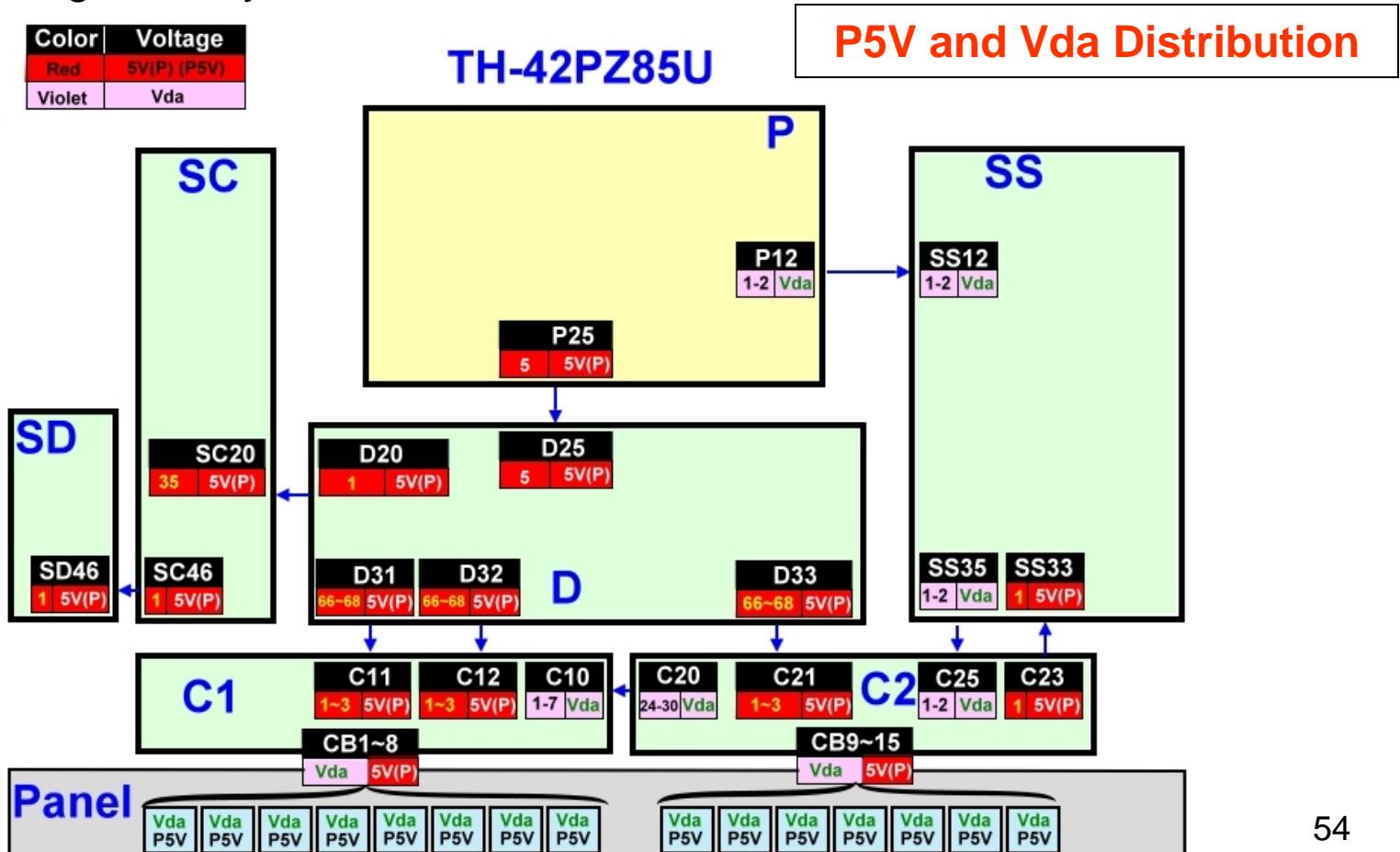
Troubleshooting 5 Blinks Error Code

When troubleshooting a PDP TV that is shutting down and the power LED blinks 5 times:

Find out if pin 1 of connector P12 is shorted to ground. If it is, possibly the panel is bad. If there is no short circuit, proceed to check the P5V line.

Find out if 5V is output at pin 5 of connector P25 of the P board.

If no voltage is output, measure resistance between pin 5 of connector P25 and ground (Chassis). If a shorted 5V is detected, find out if it's created on the P board or if it's created on any of the other boards that the 5V volt is connected to.

If the P board is OK, disconnect the connectors providing the P5V to all these boards while measuring resistance between pin 5 of connector P25 and ground.

The defective board is found when the connector that provides the P15V to that board is removed and the short circuit is no-longer present.

Panasonic ideas for life

D16280(D280) Location (8 Blinks)

PANEL

SS

N 2.7V SOS

D16255

IC16251 Comparator

D16285

SS61
1

SS35

SS_SOS8

D16280

Q16280

D16282

SS63
1

D16284

SS64
1

To pin 66
IC9003

SS66
1

8

SS

D16280 (D280)

SS

Anode

D16280
(D280)

D280
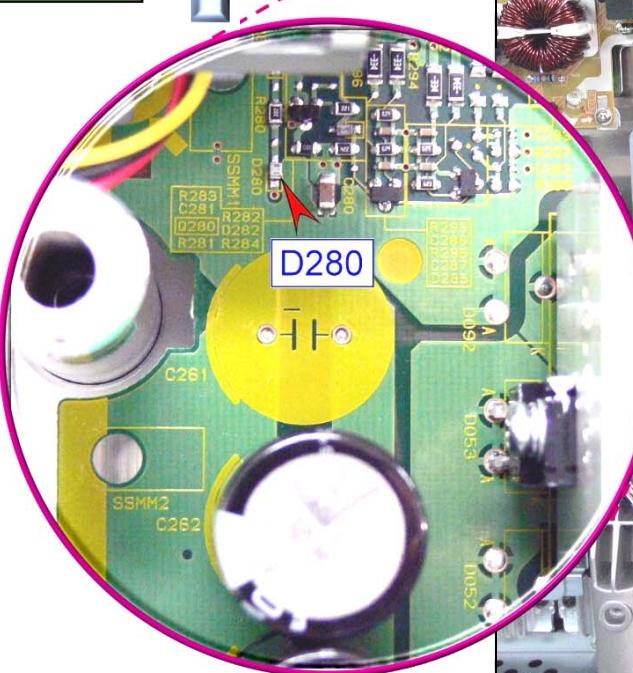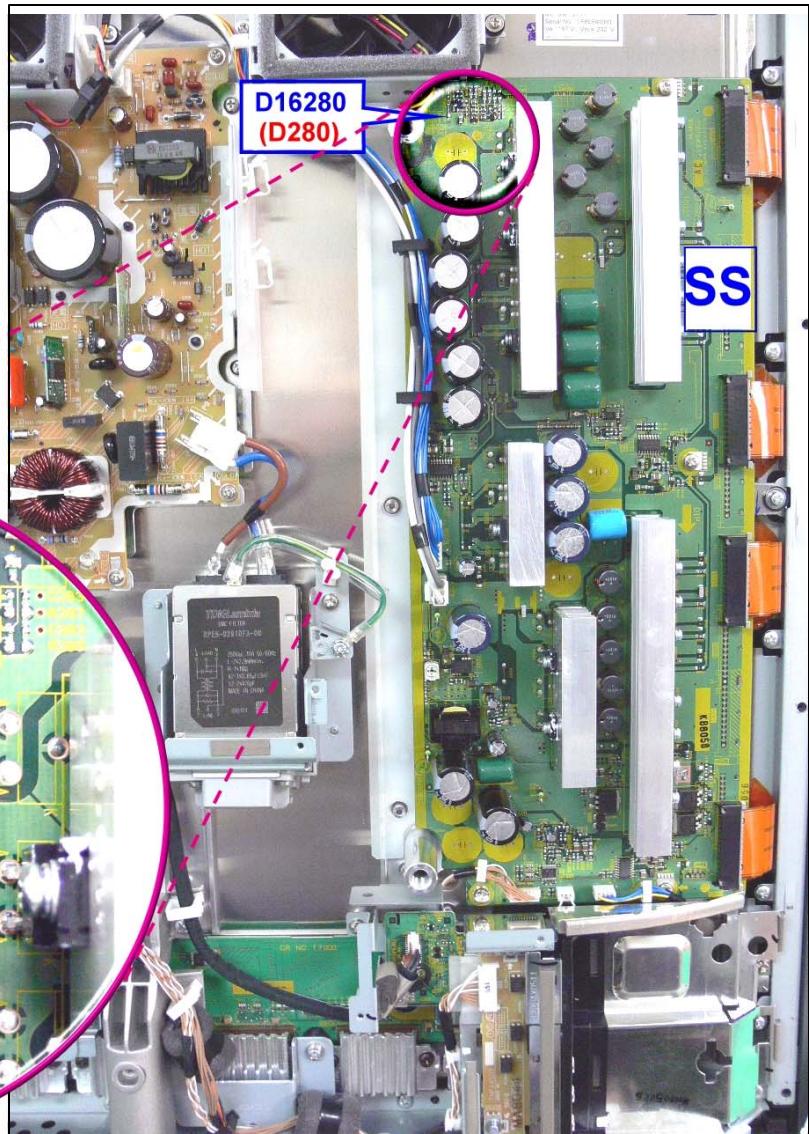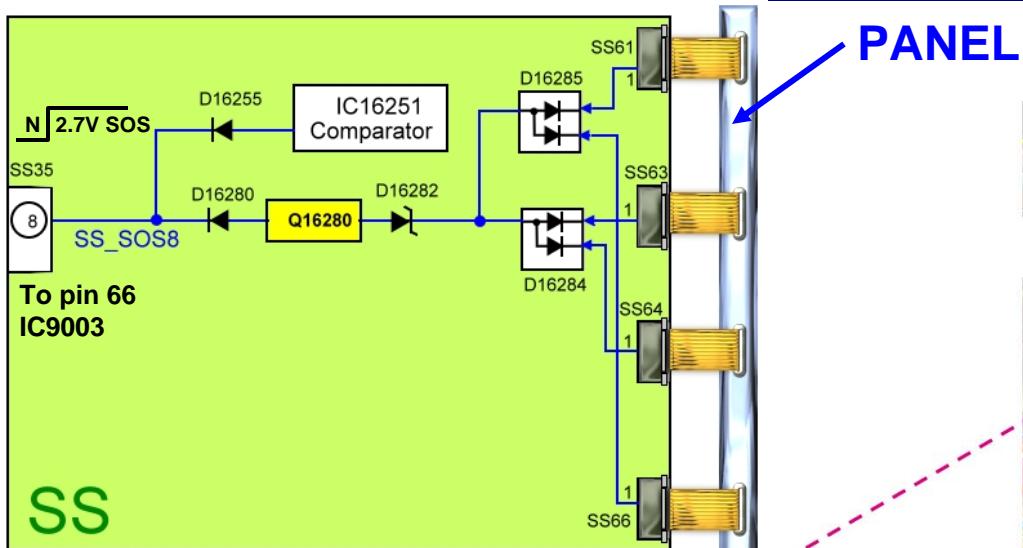
8 Blinks SOS Detect Circuit

There is an extra SOS Detect circuit in the Sustain board. This circuit is used to monitors for short circuit condition of the sustain electrodes in the panel.

Under normal condition, D16282 conducts keeping Q16280 on. When Q16280 is on, a low is provided to the anode of D16280 (D280).

If a short circuit is detected, Q16280 turns off and a high is provided to the anode of D16280 (D280). This high is provided to pin 66 of the CPU in the D board. When this happens, the TV shuts down and the power LED blinks 8 times.

To determine if the 8 blinks is caused by the D board, SS board, or the Panel:

- Isolate the SS board and check if the TV stays on when it's turned on.
- If the TV does not stay on after disconnecting the SS board, the D board is

   defective.
- If the TV stays on, then the SS or the Panel is defective.
- If the anode of D16280 (D280) is high (2.7V) at the time the unit shuts

 down, the Panel is defective.
- If the anode is low, the SS board is defective.

Panasonic ideas for life

Sustain Drive Board (SS) Isolation

Caution: Do not let the TV run for more than 30 seconds while connectors or boards are disconnected.

Panasonic ideas for life
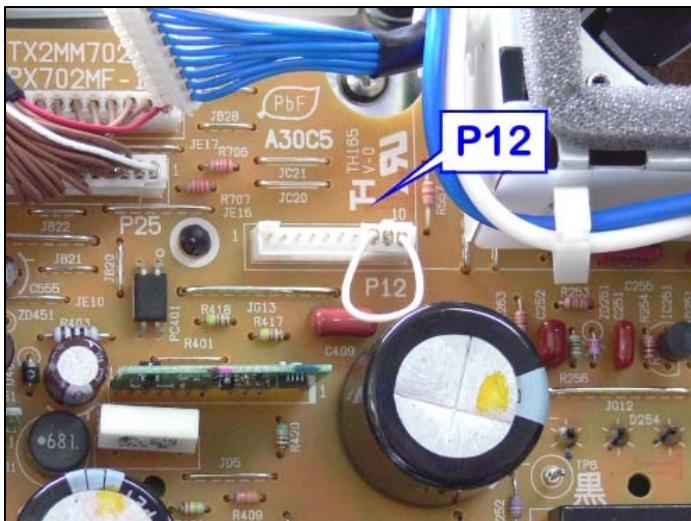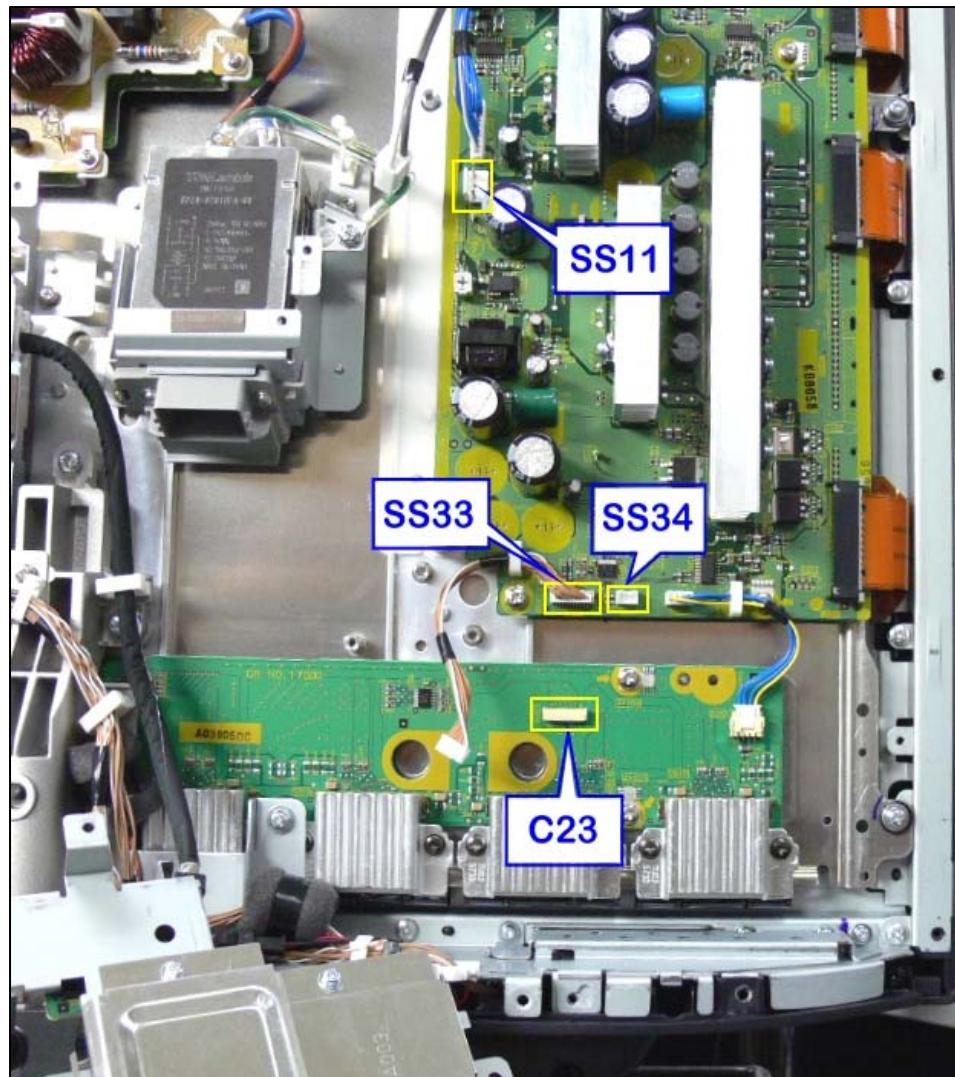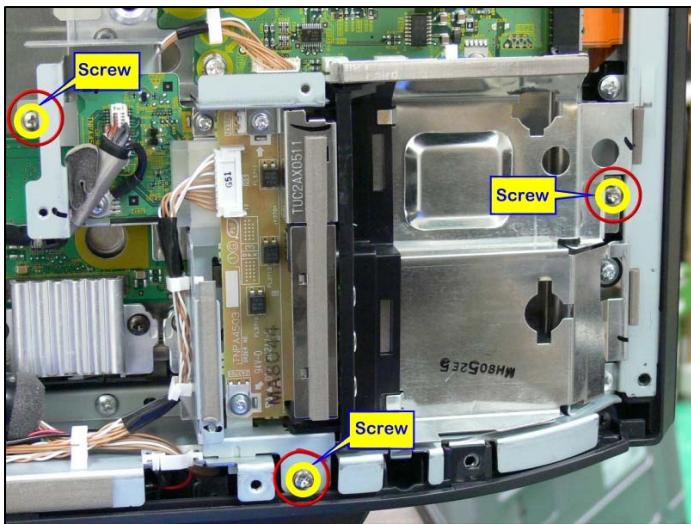
Sustain Drive (SS) Board Isolation

To determine if the Sustain board is defective, it might be necessary to disconnect it from its power source (P board) and its sustain drive pulses source (D board).

To do this, remove connectors **SS11** (VSUS), **SS33** or **C23** (P+5V and sustain pulses), and **SS34** (Jumper) from the Sustain Drive board (SS).

Remove connector **P12** (P+15V) from the Power Supply (P board). Place the connector removed from SS34 across pins 8 and 10 of connector **P12.**

Note 1: Connector **SS34** is much smaller than connector **P12** but it fits ok when it's installed across pins 8 and 10 of connector **P12.**

Note 2: In order to get to SS33 and SS34, it might be necessary to remove the Side Terminal Unit assembly. Remove 3 screws to remove Side Terminal Unit assembly.

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Panasonic ideas for life

SC/SU/SD Board Isolation

To isolate the Scan Drive Section (SC, SU, and SD board), remove connectors SC2 (Vsus) and SC20 (P+15V, P+5V, and Scan pulses) from the SC board.

When this is done, the display is completely black (No picture)
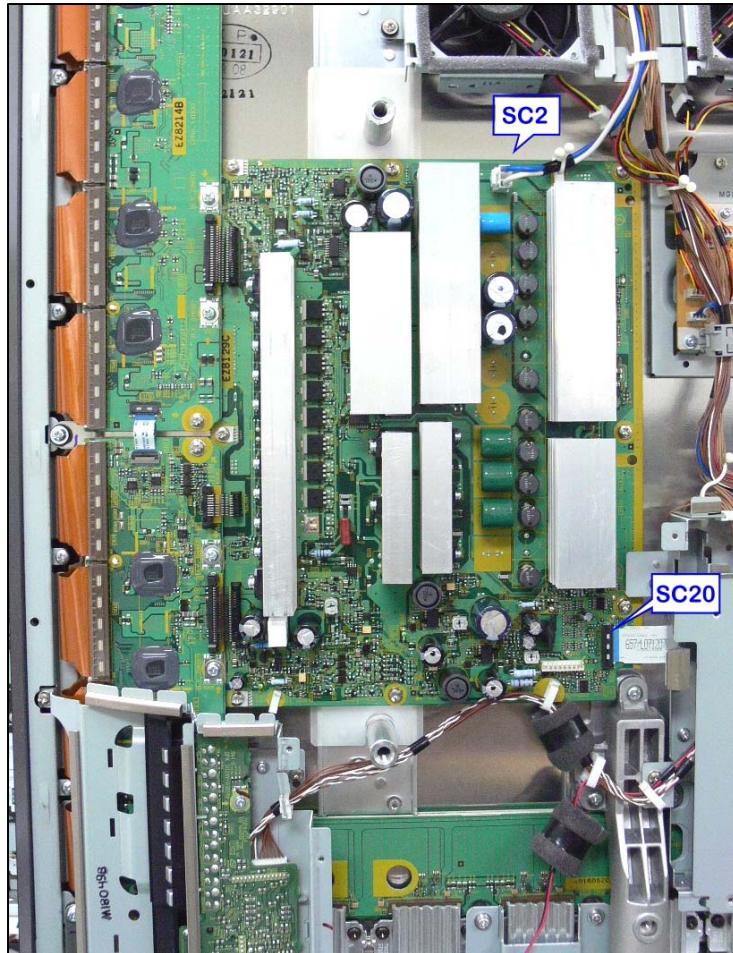
Caution: Do not let the TV run for more than 30 seconds while connectors or boards are disconnected.
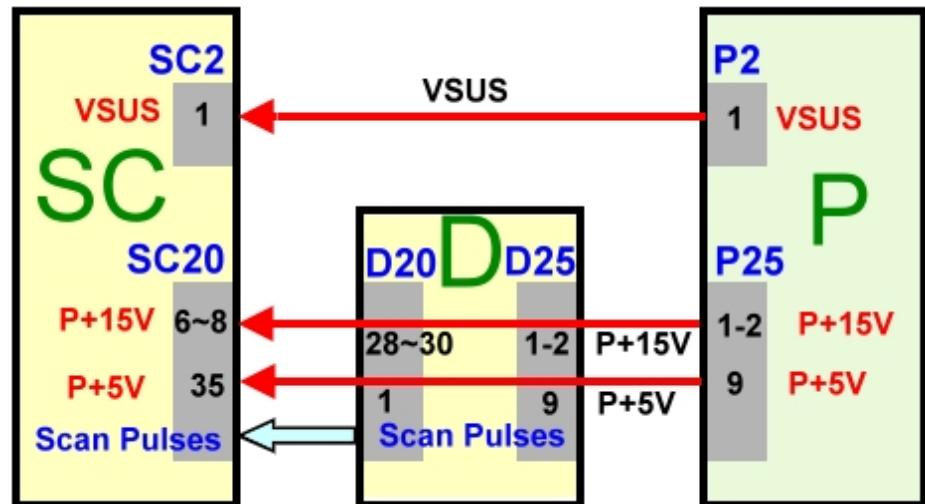
This procedure could be useful when troubleshooting 7 blinks problems.

Panasonic ideas for life
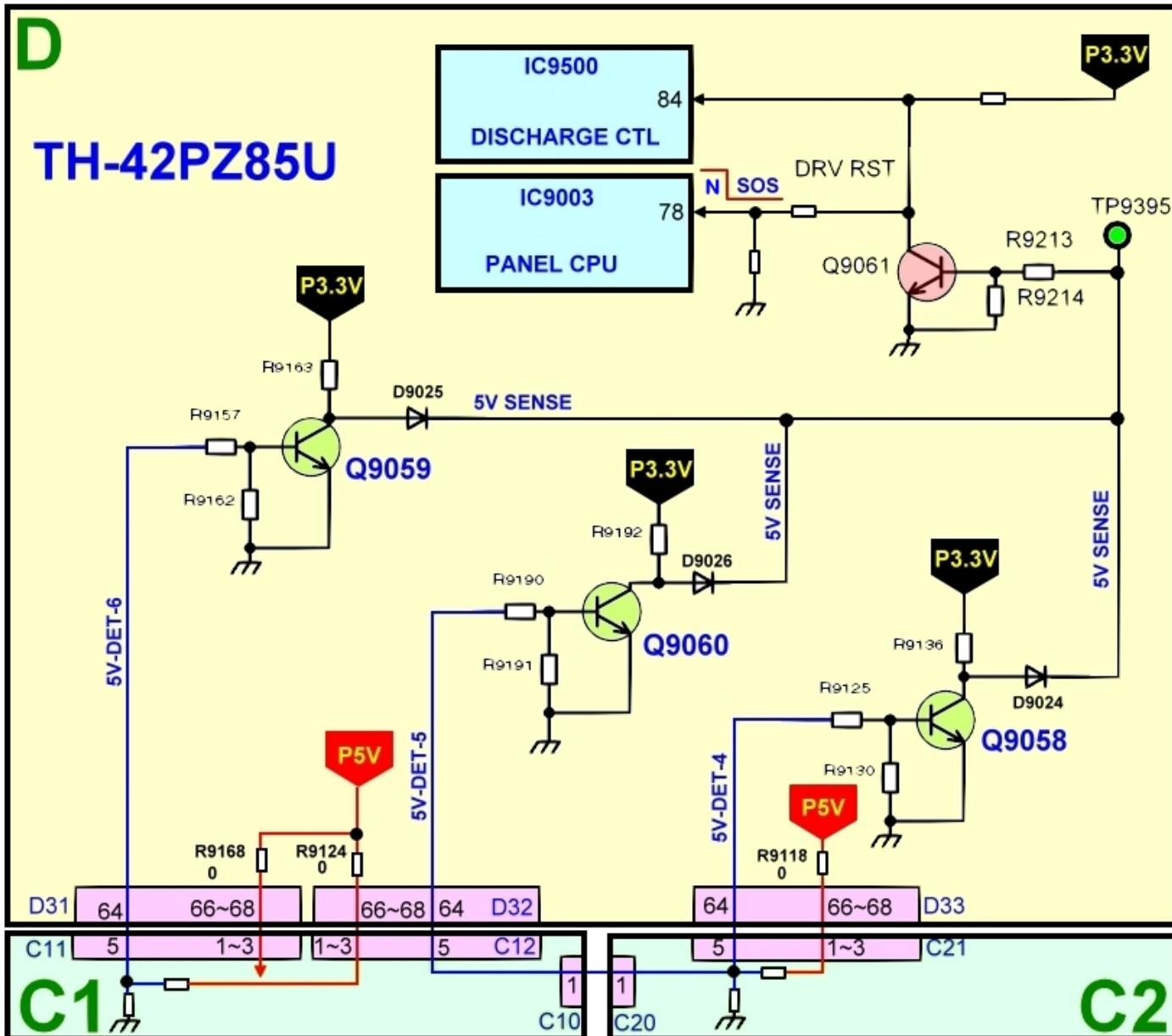
Drive Reset Circuit Explanation

The DRV RST circuit of the D board is used to monitor the physical connection of the D board to the C board. DRV RST input to IC9500 and IC9003 must be high for the unit to operate. The D board provides the 5V source needed to power the C boards. On the C1 board and the C2 board, the 5V is routed back to the D board via connector C11/D31, C21/D33 to activate the 5V SENSE circuit. A voltage divider consisting of R9157 and R9162 (For TH-42PZ85U) develops a voltage drop that causes the collector of transistors Q9058, Q9059, and Q9060 to become low. As a result, the base voltage of Q9061 also becomes low causing its collector to go high. The output voltage is applied to IC9500 and IC9003 as DVR RST.

When the 5V SENSE circuit does not detect 5V from the C1 board and the C2 board, the DVR RST output becomes low. The unit goes into shutdown and the power LED blinks 6 times.

Panasonic ideas for life

SU/SD Board Isolation

Caution: Pay close attention to the VF Ground Screws.
Resistance between VF ground and Chassis ground should be in the Kilo-ohms range

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Panasonic ideas for life
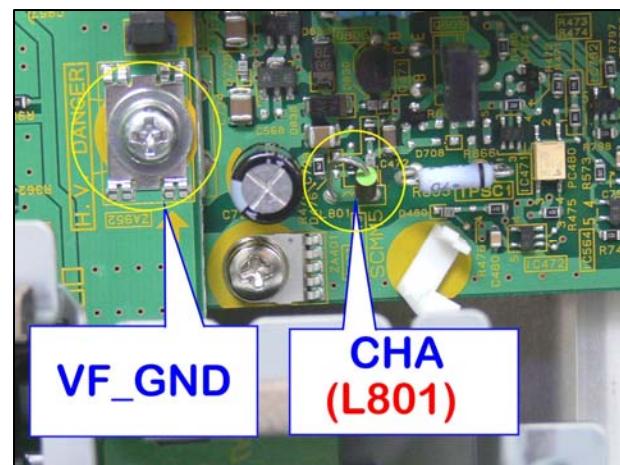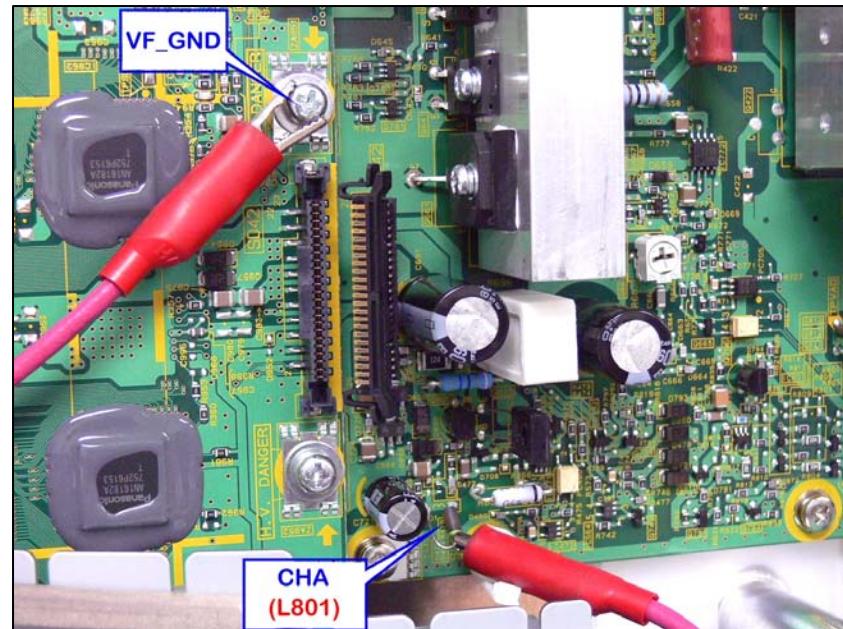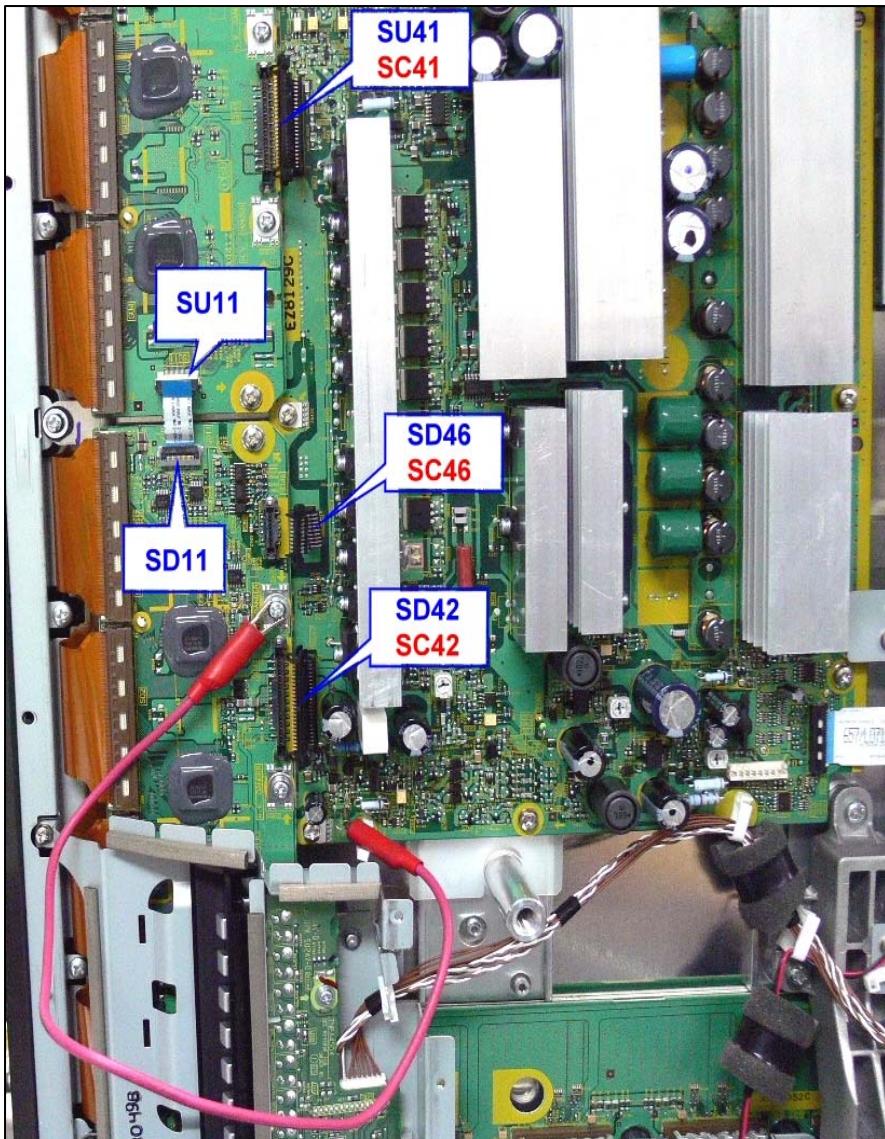
SC/SU/SD Board Isolation (Explanation)

Unlike previous models of Panasonic Plasma TVs, the 2008 models are designed not to turn-on if either the SU or SD board is disconnected.

Disconnecting either causes the unit to shutdown and the power LED to blink 7 times.

Unplugging any of the connectors SC41/SU41, SU11/SD11, and SC42/SD42, opens the interlocked connection between VF_GND and CHA on the SC board. This floats point "CHA" and Q16471 turns on. IC16471 and PC16480 output a high to the "And" gate (IC16472) triggering shutdown.

Panasonic ideas for life

NEW CIRCUIT
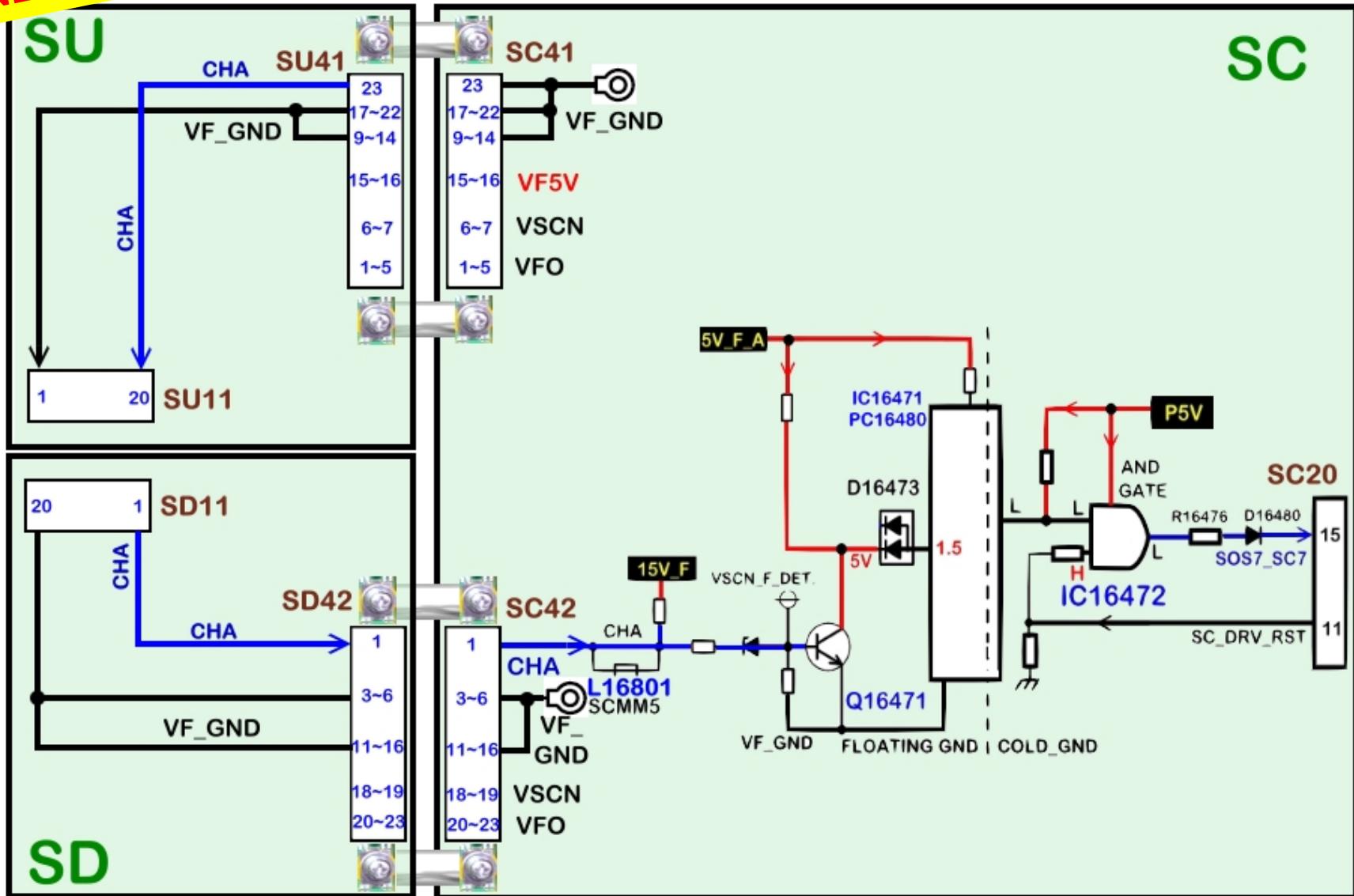
Symptoms caused by defective SD boards
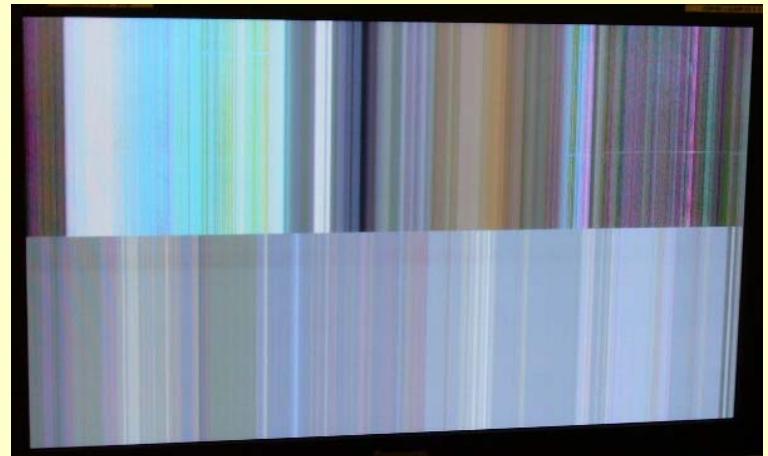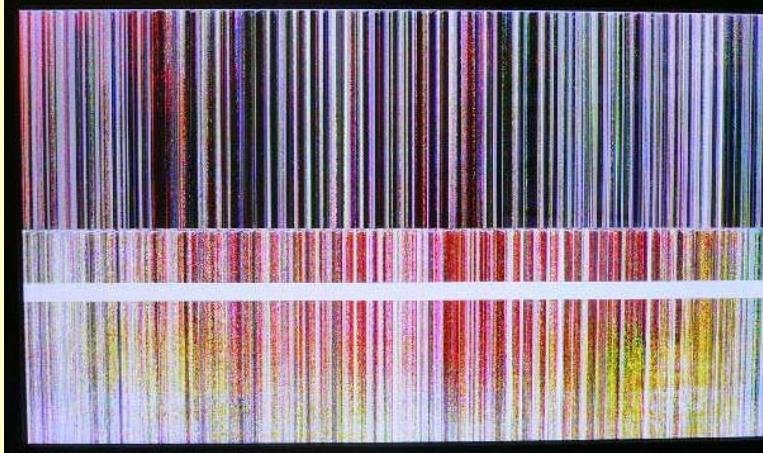
These symptom seems to be caused by a defective D or SC board but in reality, they are caused by a defective SD board.
To confirm this, disconnect the SD board from the SC board (Follow proper SU/SD board isolation procedure).

If the SD is defective, the screen will have a good picture at the top half of the screen and a completely black area in the lower half.

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Panasonic ideas for life

Symptom Caused By Defective SU Board
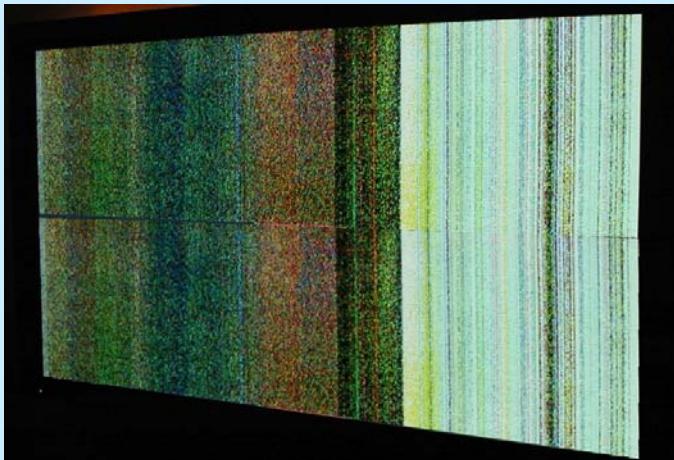
Disconnect the SU board from the SC board.
(Follow proper SU/SD board isolation procedure)
If the SU is defective, the screen will have a good picture at the bottom half of the screen and a completely black area in the upper half.

This is what normally a non shutdown problem caused by the SU board looks like

Panasonic ideas for life

A board SOS Detect Block Diagram

If a fan is disconnected, place a jumper between pin 2 and pin 3 of the missing fan connector

Panasonic ideas for life
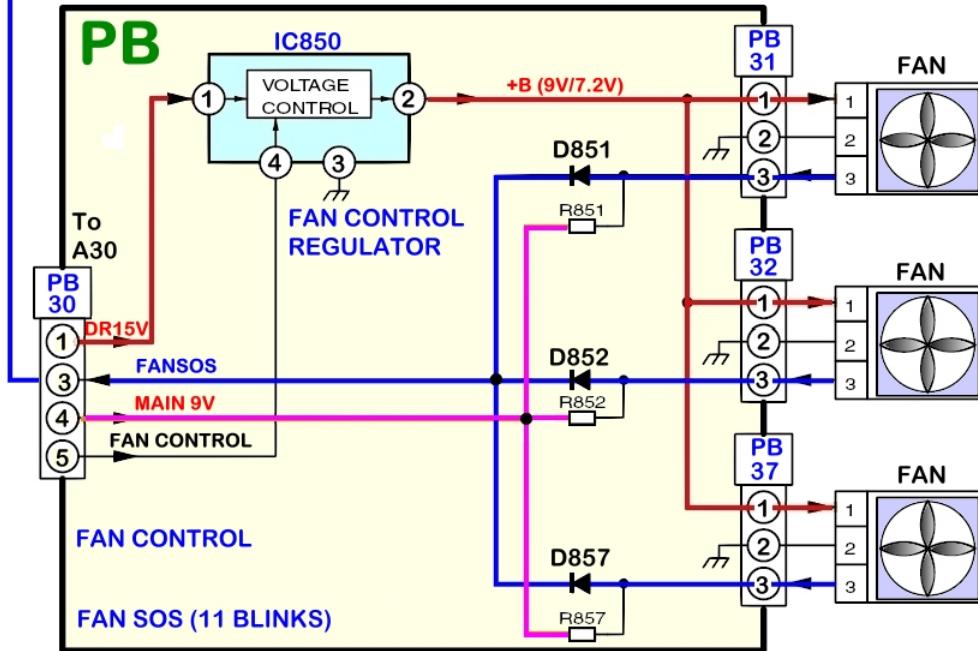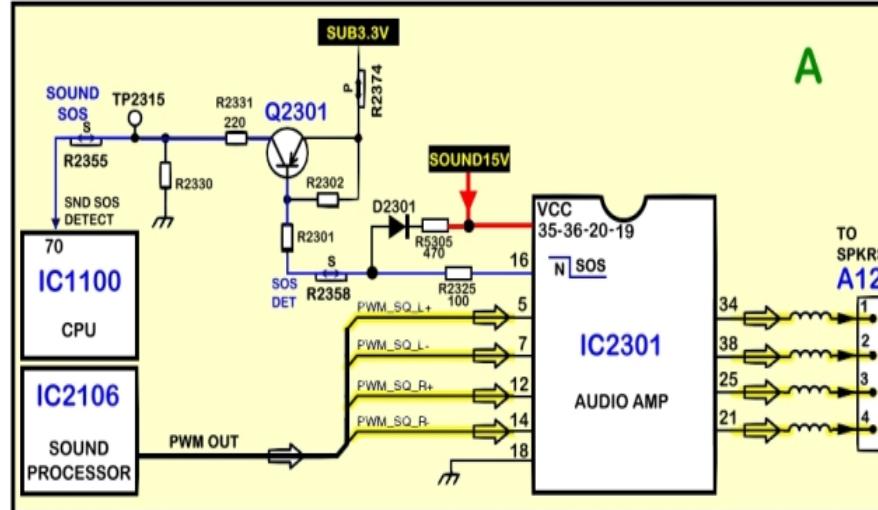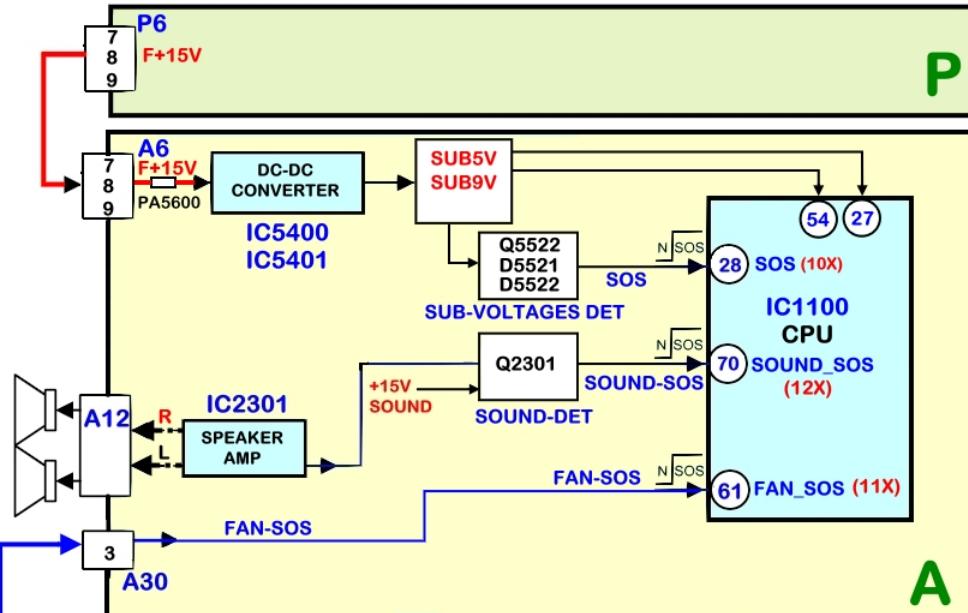
A board SOS Detect (Explanation)

10 Blinks SOS: The voltage regulators IC5400 and IC5401 in the A board generate SUB9V and SUB5V. The 9V and 5V from these ICs are monitored by IC1100. Any abnormality on the SUB9V or SUB5V lines, triggers the shutdown circuit and the MPU shuts down the unit. The power LED blinks 10 times.

11 Blinks SOS: The ventilation fans are monitored for proper operation. If one of the fans opens or increases resistance, the resulting current change is applied to pin 61 of the main CPU. This triggers the Fan SOS and the TV shuts down. The power LED blinks 11 times.

To prevent the TV from shutting down when one of the fans is disconnected, a jumper should be placed between pin 2 and pin 3 of the missing fan connector.

12 Blinks SOS: On the A board, transistor Q2301 monitors the Sound 15V line and the operation of the audio power amplifier IC2301. If the audio output circuit, IC2301, or the 15V lines develops a short to ground, transistor Q2301 goes into conduction and applies a high to pin 70 of the MPU, IC1100, triggering a SOS condition. The power LED blinks 12 times.

A short circuit in the sound P15V normally shuts the TV down and the power LED blinks 2 times. It can also cause the TV to shutdown and make the power LED blink 12 times.

Panasonic ideas for life

Digital Signal Processor

Panasonic ideas for life

Digital Signal Processor Block Diagram (TH-42PZ85U)

Panasonic ideas for life
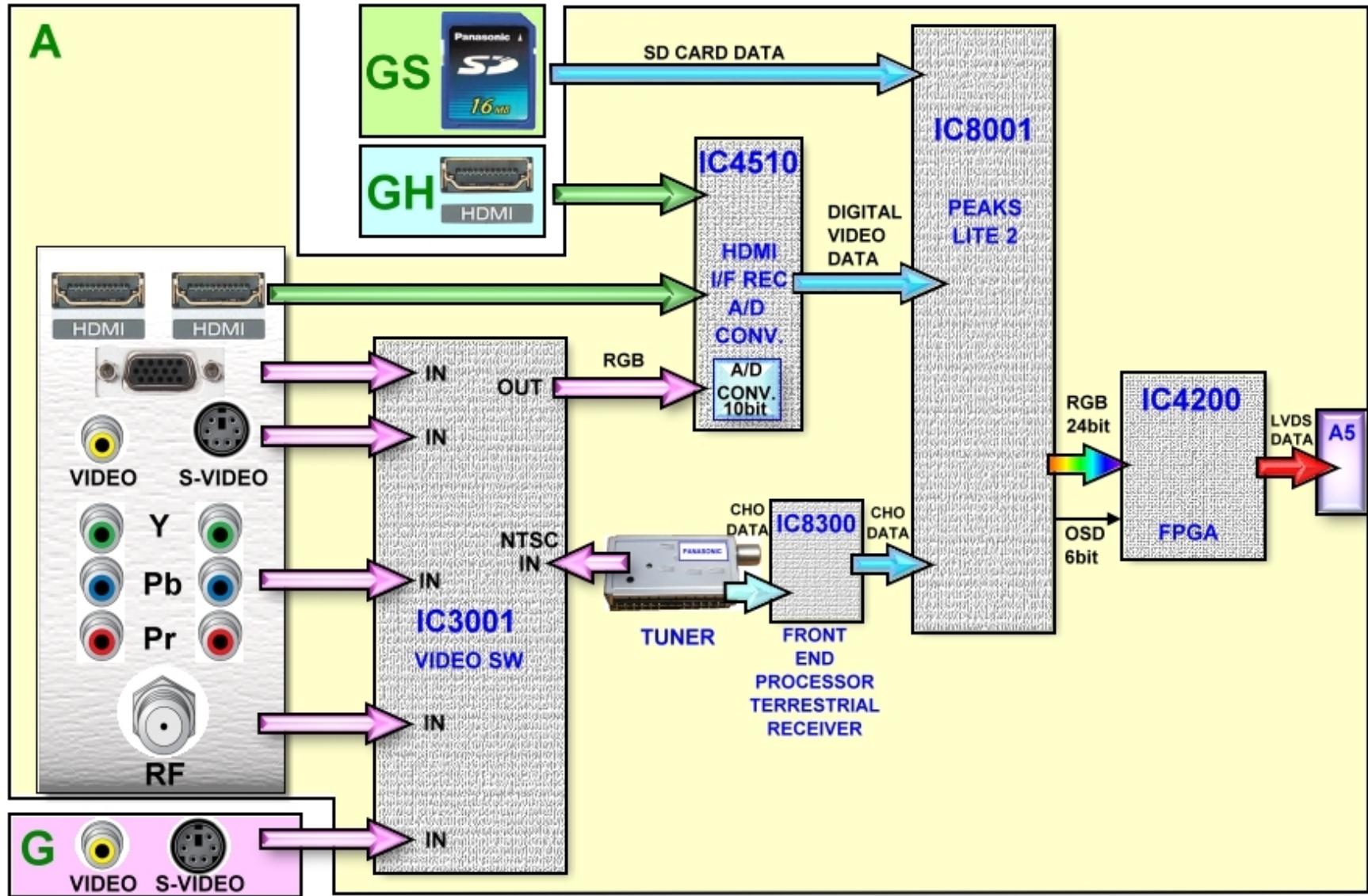
The main function of the A board is to select and process one of the incoming video signals. Video inputs 1 and 2, Component Video Inputs 1 and 2, PC input, and the composite video output of the tuner are all are connected to IC3001 for selection. The video output signal of the switch can be in any of the three formats: Video, Y/C, or Y, Pb, Pr. The selected output enters IC4510, the HDMI IF Receiver/Decoder IC, for A/D conversion.

A comb filter inside IC4510 converts the composite video signal of the main picture to Y and C (luminance and chrominance) signals. S-Video, which is already Y/C separated, simply passes through the comb filter. The chrominance data is then applied to the Chroma Demodulator circuit to separate the color signal into Pb and Pr data. At the completion of this process, the format of the composite or S-Video signal is now the same as a digital 480i component signal. If the incoming video is in the 480p, 720P, or 1080i format, the Y, Pb, and Pr signals undergo A/D (analog to digital) conversion only. The 10 bit YUV data is provided to a video switch.

The HDMI receiver section of IC4510 converts the incoming HDMI signals to a YUV video signal. The Video interface circuit selects between the two HDMI sources and outputs the YUV signal to the switch. The output of the switch is provided to another switch located inside the PEAKS LITE IC, IC8001.

Digital television reception of the tuner is output in the form of an IF (Intermediate Frequency) signal
IC8300 contains a detector circuit that retrieves the Transport stream from the IF signal. The transport stream then enters the DTV I/F (Interface) section of IC8001 where the video signal is extracted and converted to YUV data. The output is provided to the Video Input I/F for selection. The JPEG data of the SD card enters the JPEG I/F section of IC8001 for conversion into YUV data and output to the Video Input I/F circuit. The video input interface outputs the selected picture data to the video process circuit.

This Video Process section of the IC performs all picture control operations such as brightness, contrast, color, tint, etc. On Screen Display data such as channel numbers, Digital TV closed caption, and picture adjustments are mixed with the video data. The output signal is then applied to the LVDS (Low Voltage Differential Signaling) transmitter for conversion into serial data. The LVDS transmitter transfers the video information from the A board to the D board. It distributes signals with low-jitter, while creating little noise. It reduces power consumption and the generated noise from data transmission. Another benefit of the LVDS standard is minimal concern for cable length.

The main MCU handles all video applications. It serves as the controller that monitors all operations of the TV section (not display) of the unit.

Switching to 4:3 to confirm problem with the A board

Switching the Aspect to 4:3 can help confirm if the symptom is created by a defective A board. If the side bars are not affected by the symptom, the A board is defective.

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Panasonic ideas for life

D Board (Format Converter/Plasma AI Processor)

Panasonic ideas for life

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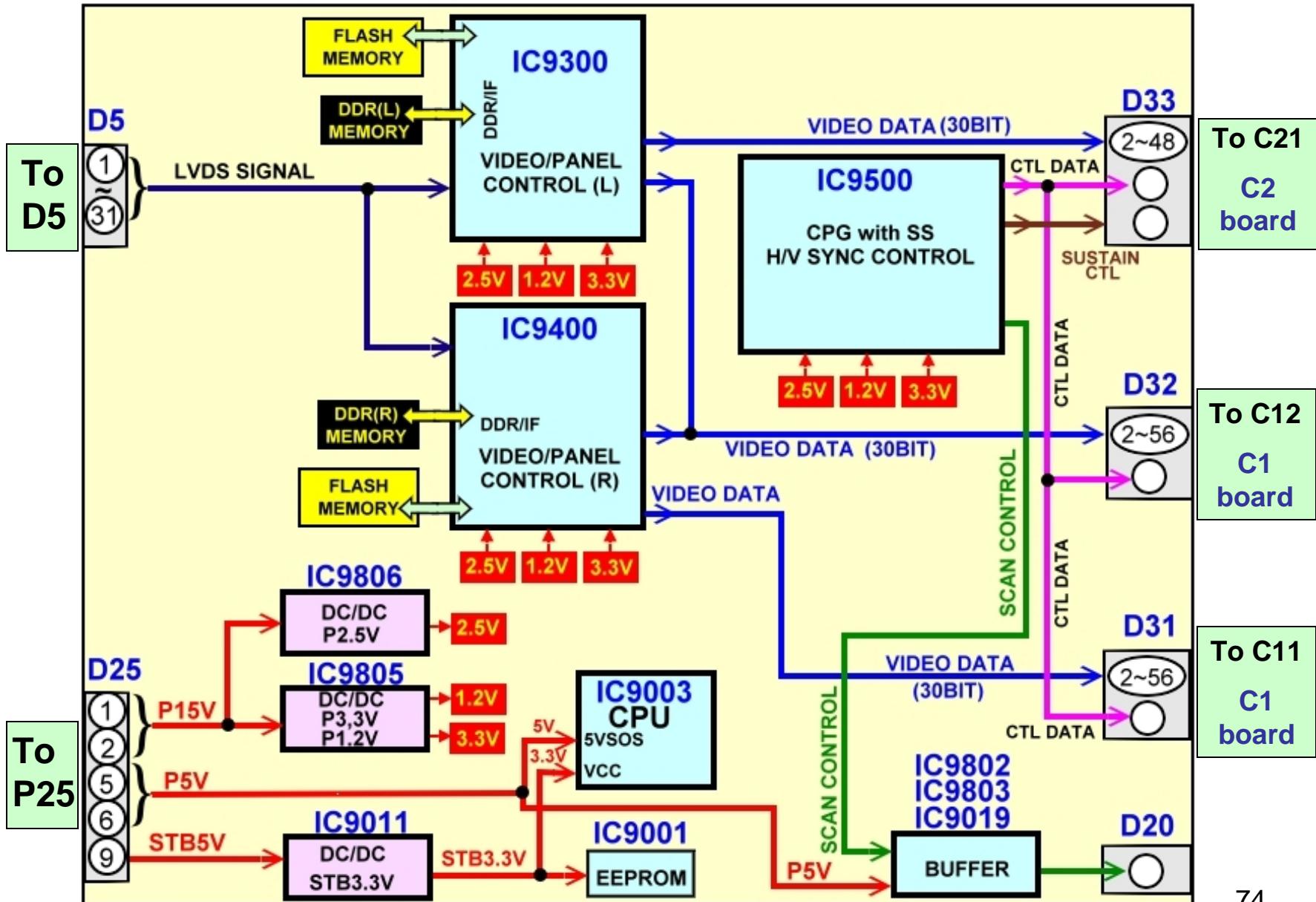
Circuit Explanation

The D board consists of a Video/Panel Control circuit, a Discharge Control circuit, and a Microprocessor Control circuit.

The LVDS (Low Voltage Differential Signaling) signal from the A board is processed by the Video/Panel Control circuit (IC9300 and IC9400).

The Discharge Control circuit outputs the Control Data, Sustain Data, and Scan Control Data. The Control Data is used by the Data Drive Circuit boards (C boards). The Sustain Control Pulses are used by the Sustain board and the Scan Control Pulses are used by the Scan board.

The Main CPU IC9003 has multiple functions. It provides the command to turn on/off the Power Supply and the Panel Drive circuit within the D board. It also monitors a number of voltages and circuits providing protection by shutting down the TV when an abnormality is detected. This condition is communicated to the Main CPU in the A board. When this happens, the power LED blinks a specified number of times indicating the circuit that has failed.

Supply voltages P15V, P5V, and STB5V from the power supply are used to drive the circuits on the D board. Other voltages (1.2V, 2.5V, and 3.3V) derived from the P15V are used by the Video/Panel Control ICs (IC9300 and IC9400) and the Discharge Control IC (IC9500).
The P15V is monitored by the Main CPU (IC9003) for missing voltage condition.

The P5V is used by the level shifter ICs, IC9802, IC9803, and IC9019. Their functions is to change the Scan Control Pulses level from 3.3V to 5V before they are output to the SC board via connector D20. The P5V is monitored by the Main CPU (IC9003) for voltage drop condition.

The STB5V is applied to a 3.3V regulator (IC9011). The 3.3V output by this IC is used as the supply source (VCC) by the Main CPU IC9003.

Panasonic ideas for life

The LVDS signal form the A board is converted to "video data" by IC9300 and IC9400.

The digital video data is converted to progressive scan and mixed with the OSD data. Other adjustments such as white balance, contrast and color are also corrected by IC9300 and IC9400.

The Plasma AI (Adaptive brightness Intensifier) circuit analyzes the video program level for the distribution of dark and bright components. This circuit is also used to speed up the scanning process and control the number of sustain periods. This increases the brightness and improves the contrast ratio.
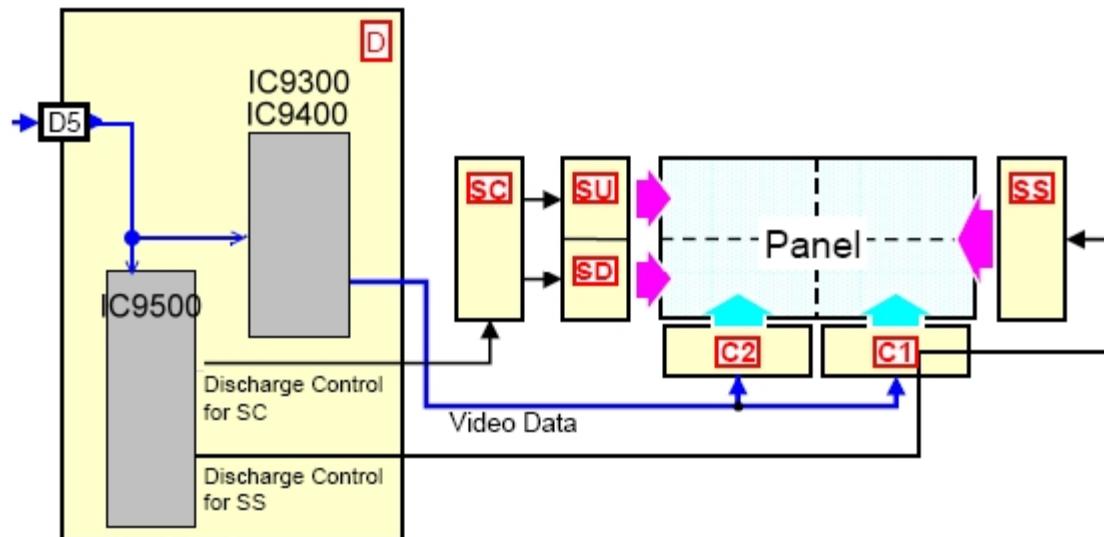
The D board provides the scan, sustain and data drive signals.
The scan pulses are output to the SC board.
The sustain pulses are output to the SS board.
The data drive signals are output to the C1 and C2 boards. The C1 board drives the right portion of the panel and the C2 board drives the left portion

Panasonic ideas for life

Pictures Of symptoms caused by the D board
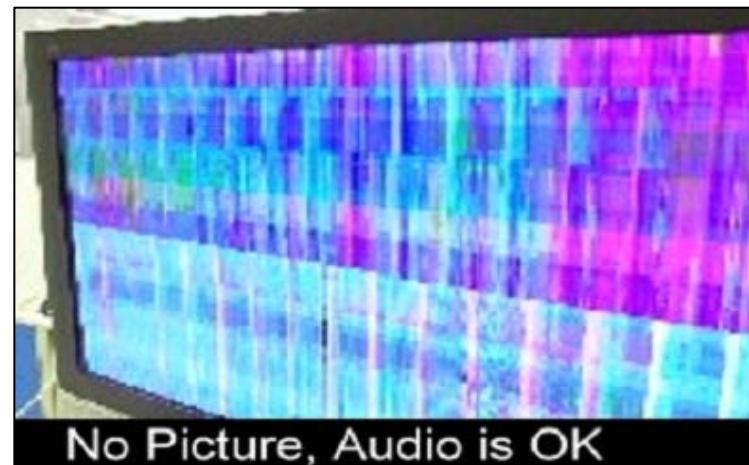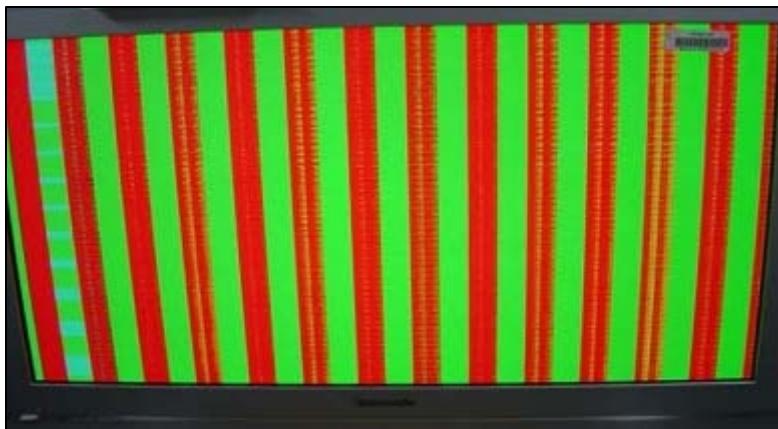
Adjustments

Panasonic ideas for life

How to enter into Service Mode:

While pressing [VOLUME (-)] button of the main unit, press [INFO] button of the remote control three times within 2 seconds.

```
SERVICE      Peaks SOFT     0.470
ADJUST       Peaks EEp      0.16
WB-ADJ       LSI DATA       0.00.31
OPTION       GenX SOFT      0.22.00
AGING        GenX ROMCOR    f.ff.ff
RM-SET       FPGA           -.--
SRV-TOOL     PDP SOFT       01.00
             PDP EEP        40.12
             PDP FPGA       40.15
             PDP PDROM      40.53
             SDMODULE       -.----
```

Key command
[1] button...Main items Selection in forward direction
[2] button...Main items Selection in reverse direction
[3] button...Sub items Selection in forward direction
[4] button...Sub items Selection in reverse direction
[VOL] button...Value of sub items change in forward
direction (+), in reverse direction (-)

How to exit:

Switch off the power with the [POWER] button on the main unit or the [POWER] button on the remote control.

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Panasonic ideas for life

Internal Test Patterns

To access the internal patterns, select [**AGING**] from the main adjustment menu and press the [**3**] or [**4**] button of the remote control to select the desired pattern.

Panasonic ideas for life

Self Check

1. Checks the communication IIC bus lines
2. Provides a SOS History

To Access the Self-Check Mode, turn the TV on and while pressing "VOLUME (-)" button on the main unit, press the "OK" button on the remote control for more than 3 seconds.

TV volume down & OK on remote only does a basic IC self check. It does NOT clear any unit settings.

It does not clear channel programmed settings, picture settings, channel labels, LOCK mode settings, or password.

Using this method, it shows the unit firmware version (Peaks 1.050 and GenX 1.00) and it checks IC communications ONLY.

This is more useful to identify the firmware version without having to decode the info in the setup menu About/Version screen.

To Exit the Self-Check Mode, Press and hold the Power button on the TV for 5 seconds or disconnect the AC cord from the wall outlet.

Panasonic ideas for life

Check Point

DISPLAY	Ref. No.	Description	P.C.B.
PEAKS	IC8001	Peaks Lite2p	A-Board
TUN1	TU8300	TUNER (PLL block)	A-Board
TUN2	TU8300	TUNER (MTS block)	A-Board
FE	IC8300	FRONT END PROCESSOR	A-Board
AVSW	IC3001	AUDIO/VIDEO SW	A-Board
ADV	IC4510	A/D CONV. , HDMI RX	A-Board
ADAV	IC2106	SOUND PROCESSOR	A-Board
GenX	IC1100	GenX5 (STB MCU)	A-Board
MEM1	IC1101	EEPROM (GenX5)	A-Board
MEM2	IC8503	EEPROM (Peaks)	A-Board
TEMP	IC9002	TEMP SENSOR	A-Board
PANEL	IC9003	PANEL MICON	A-Board

Panasonic ideas for life

Self Check Menu

Panasonic ideas for life
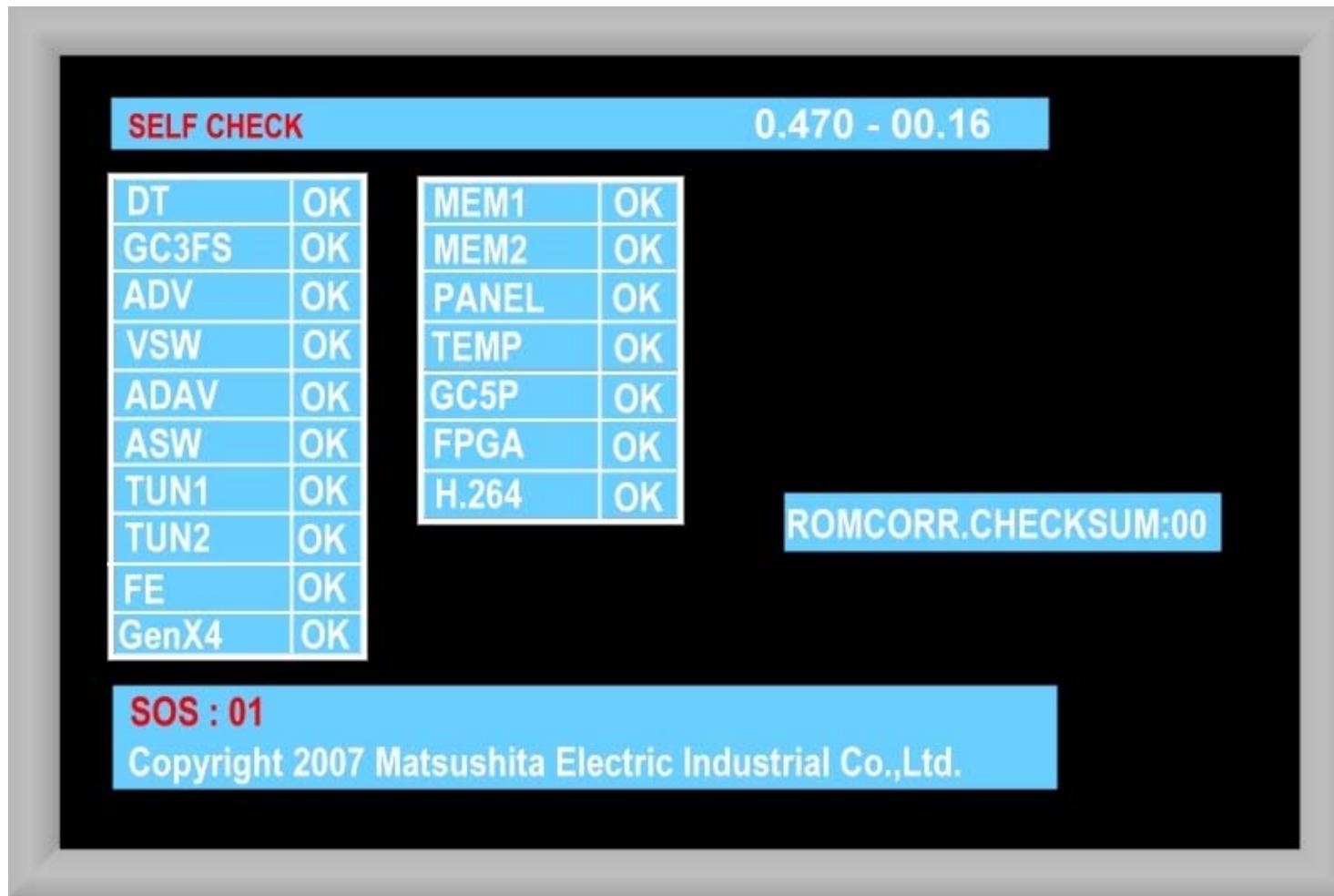
How To Reset

Note: All customer programmed parameters will be erased.

Reset forces the TV to factory shipment setting.
To reset the TV:
Press and hold the "VOLUME (-)"button on the TV and press the "MENU"
button on the remote control for more than 3 seconds.

To Exit:
Disconnect the AC cord from wall outlet.

Panasonic ideas for life

Data Transfer (TV to SD Card – SD Card To TV)
How to Copy Self Check Data To SD Card
Software Upgrade
Picture Refresh
Extension Cable Kit

Panasonic ideas for life

10-7. Data Copy by SD Card (From TV set to SD card)　(1/3)

①Copy of setting data when exchanging repair board (A or DG board)

08 PDP & LCD

(Before exchanging)
Setting data to SD Card

A
(DG)

SD

(After exchanging)
Copied setting data
to repaired board

(Available data for Copy)
・Customer setting data
・Channel scanned data
・Adjustment data / shipping data
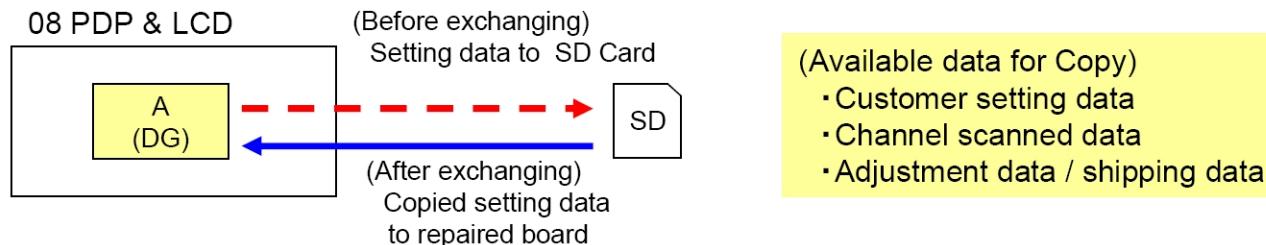
②Copy of hotel mode setting data

08PDP&LCD

Master set

(Same type model)　Data Copy

(Same type model)　Data Copy

(Same type model)　Data Copy

Copy setting data
to SD card

SD

Setting by using data of SD card

(Available data for Copy)
・Customer setting data
・Channel scanned data
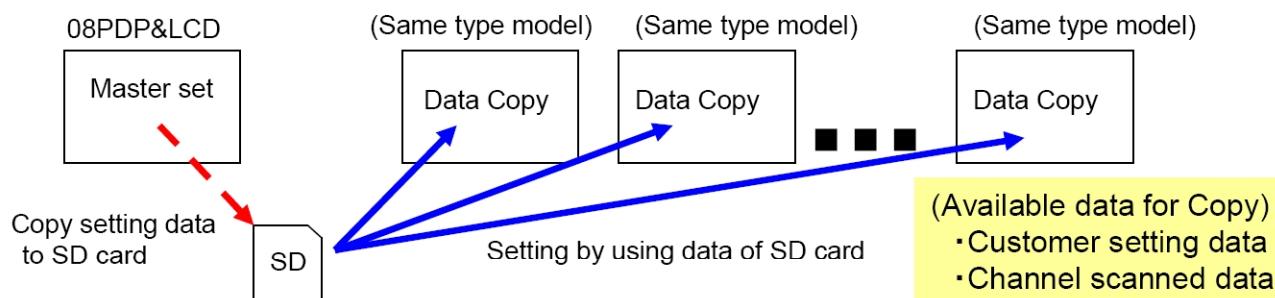
【Preparation】 Make pwd file of ① or ② in SD card.
　　　　　　 (Make new (empty) text file and change file name.)
　　　　　　　　　　　　　　　　　　 (pwd File name)
　　　　①For exchanging repair board・・・　boadreplace.pwd
　　　　②For hotel mode setting　　・・・　hotel.pwd

Note: Keep one pwd file in SD card.   If there are several files in one SD card, it is NOT likely to work.

Panasonic ideas for life

10-7. Data Copy by SD Card (From TV set to SD card)　(2/3)

【Steps of Data Copy to SD card】(TV set → SD card)
  1. Power On TV set.
  2. Insert SD card with pwd file to SD slot.
  3. Automatically, Data Copy display will appear.

  4. Input Pass word for Data copy to SD card
       by using remote control.
      （Password for Data Copy）
        ①For exchanging repair board・・・ 2770
        ②For hotel mode setting ・・・　　4850
  5. Perform Data copy to SD card.

      Information for reference
        Time for Data copy (TV → SD card)
          USA/ Latin model ・・・ 360 seconds max.
          Euro/Asia model・・・ 90 seconds max.

  6. End of Data copy to SD card
      After the completion display of
      Data Copy appear, pull out SD card.
      Even if SD card is not pulled out, the display
      will appear automatically.

  7. How to confirm Copy data
      File data can be confirmed by PC.
      When the following folder exists, data is pulled out.
      Folder Name:　①For exchanging repair boards ・・・ user_setup
                        (After writing data, data is deleted.)
                    ②For hotel mode setting・・・　　hotel
                        (After writing data, data is not deleted.)

(Board replacement) For exchanging repair board
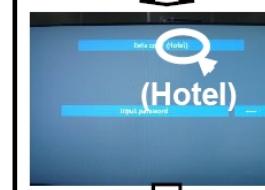
(Hotel) For Hotel mode setting

Input Password Input password

Performing Performing
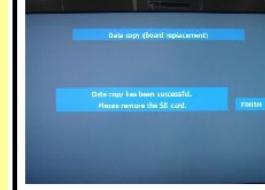
Completion (e.g. exchanging repair board)

Panasonic ideas for life

10-7. Data Copy by SD Card (From SD card to TV set)   (3/3)

【Steps of Data Copy to TV set 】
1. Power On TV set.
2. Insert SD card with Data to SD slot.
3. Automatically, Data Copy display will appear.
4. Input Pass word
   Input Pass word for Data copy to TV set
      by using remote control.
   （Password for Data Copy）
      ①For exchanging repair board··· 2771
      ②For hotel mode setting ···   4851

5. Perform Data copy to TV set.

6. Completion of writing Data to TV set.
      ・Completion of data Copy is displayed.
7. Pull out SD Card
      ・Power OFF/ON by main switch.

Note: 1. Depending on the trouble of boards, function
         of Data copy for exchanging repair boards
         does not always work.
      2. This function does not work between the same
         models.

(e.g. For exchanging
   repair board)

Password Input(For writing)

Performing

Writing performing display

Completion

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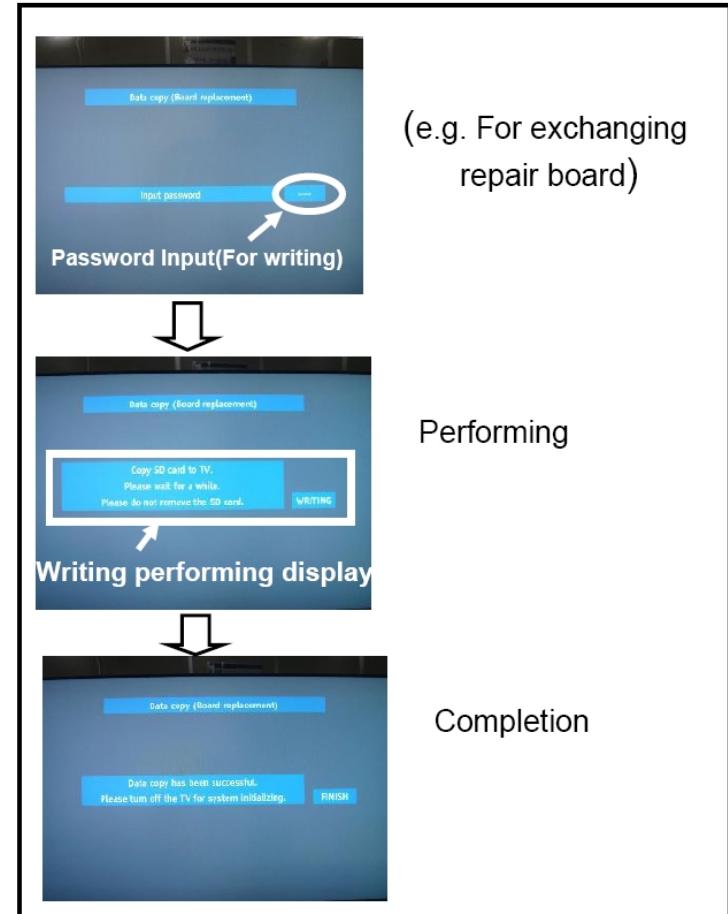
How to Copy Self Check Data To SD Card

● Contents：
　By using this function, **even when the screen is black,** the results of Self Check can be confirmed.

● Available models：
　2008 All PDP models

●Steps
　1. Power on of TV set and insert the SD card.　(Starting file is not necessary.)
　2. After inserting SD card、perform Self Check according the method of Service Manual.
　3. After the completion of Self Check、log file of results is automatically made.
　　　File name is selfcheck.log.
　　　If selfcheck.log is already in SD card, results are overwritten.

(e.g.TH-42PX80U   )

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How to Copy Self Check Data To SD Card

How to read Self check. Log file

(File contents)

[yy/mm/dd hh:mm:ss] 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

yy: year(Two last digits),
mm: month,
dd: day,
hh: hour,
mm: minute,
ss: second

①USA / Latain(NTSC) models   : No.1～20
②Europe/Asia/Latin(PAL) models： No.1～22

Items of Self check:
Refer to the table below

Self check result
 00 : OK
 FF : NG or Not available for Self check

①USA/Latin (NTSC) models

No.	Self check items	No.	Self check items
1	exec flag (Self check完了で01)	11	mem2(EEPROM for Peaks Lite2 Plus)
2	PEAKS	12	mem4(EEPROM for HDCP of Hudson)
3	TUN1	13	Temperature Sensor
4	TUN2	14	pdppnl (PDP Panel module)
5	FE (Digital demodulator)	15	GC6
6	avsw (Audio & Video SW)	16	GC3FS
7	adv (ADV7495A)	17	Cable Fe
8	adav(ADAV4601)	18	Ext. I/O
9	genx (Genx or Hudson)	19	reserve1
10	mem1(EEPROM for GenX or Hudson) or mem3(EEPROM for Hudson)	20	reserve2

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10-9. Software Upgrade Using the SD card (1/4)

● Contents：
By using this function, after repair, if necessary, software can be easily improved to the latest version.

● Available models：
2008 PDP all models
2008 LCD models that use Peaks Lite 2 Plus
(Details for available LCD models are informed separately.)

● How to get the latest software data
Contact Technical Support Team/CSPC for access method and data place.

● Steps to version up to the latest software version

【Preparation】
①Getting software
From the above method and place, get the latest software (File name: SDDL.SEC).
(Note: File name of software for version up is same.)

②Keeping the data into SD card
Copy the data for version up of software (SDDL.SEC) to SD card.

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10-9. Software Upgrade Using the SD card (2/4)

【Software Version up by SD card 】
1. Power ON TV set.
2. Start the service mode and confirm the version of present Peaks SOFTWARE.

Note: Version up function is only available when version up number is higher than version of present TV set.
When rewriting by using the same version No. or lower version No. is done, error message display appears. So, confirm the Version number of software for version up.

Confirm Version of Peaks SOFT.
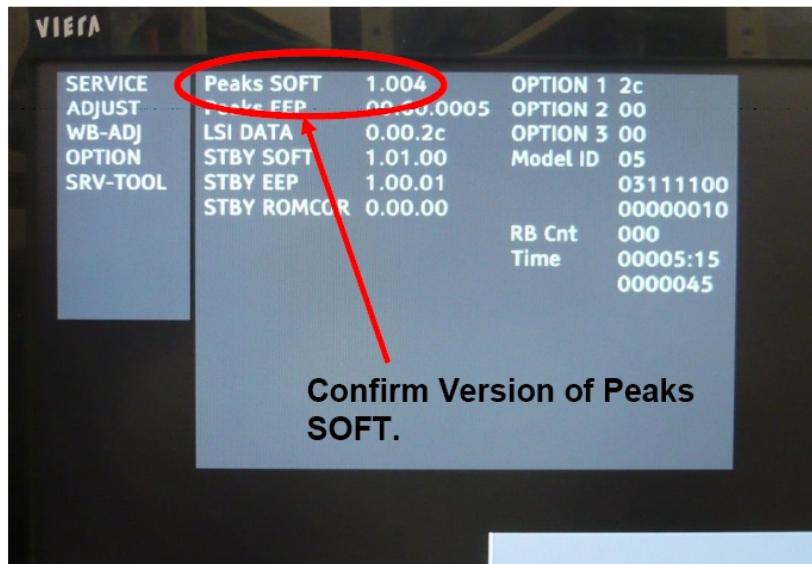
Top display of service mode

Error message:
Please check file in SD card (0004)

Error message display

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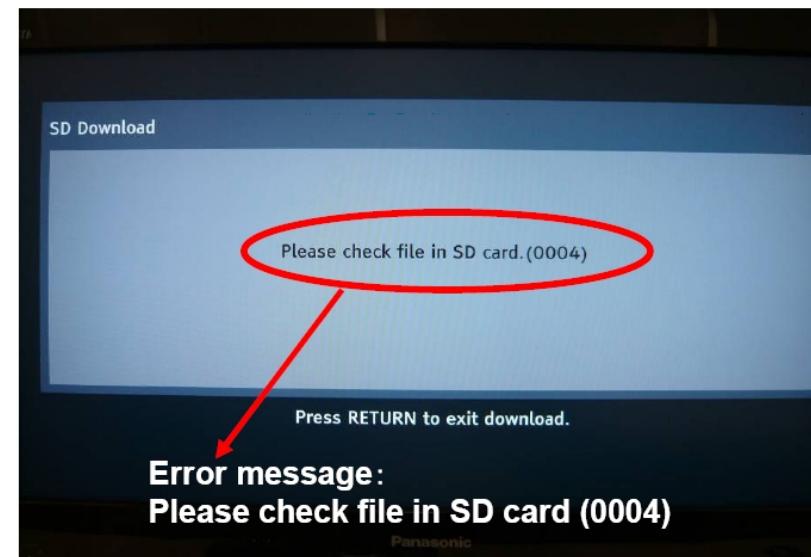
10-9. Software Upgrade Using the SD card (3/4)

(Performing)

3. Insert SD card with software (SDDL.SEC)
   for Version up into SD slot or SD slot for Service.
4. SD DOWNLOAD display starts automatically.
5. Information display appears automatically
   and confirm software version.
6. After confirming software version, push "OK" key
   by remote control.
   Start display appears automatically.
7. Select "Yes" display and push "OK" key by remote control.
   Download from SD card starts.

8. After completion of SD download, finish display appears.
9. According to the finish display,
   pull out SD card, switch OFF and switch ON.

Start

SD download information

SD download

Performing

Performing 2

Completion

Panasonic ideas for life
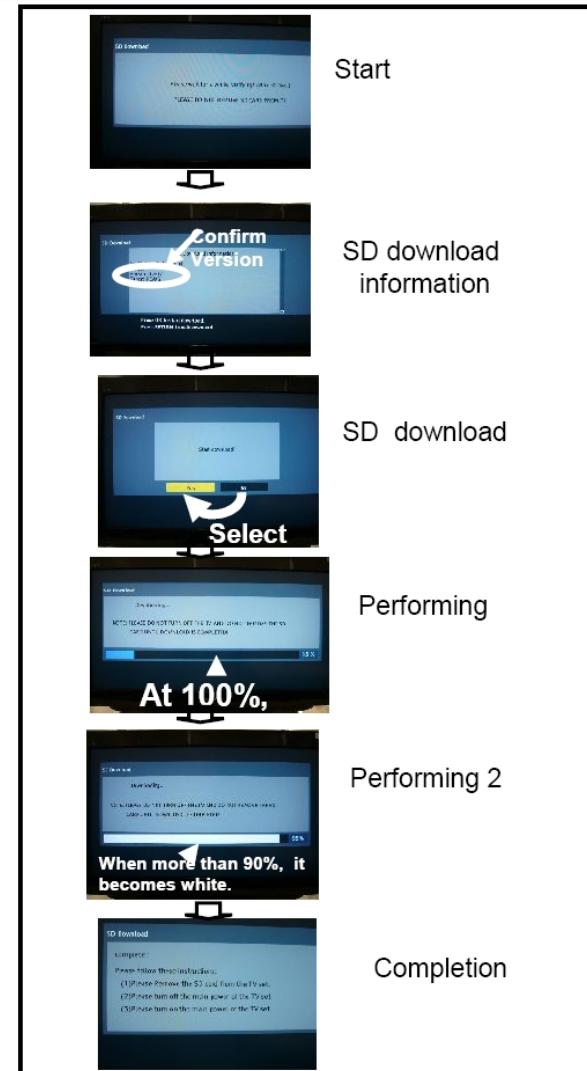
10-9. Software Upgrade Using the SD card (3/4)

(Initialization of TV system and confirmation of software Version)

10. When power of TV set from OFF to ON,
    initialization of TV system is done at first.
    (First time is maximum 3 minutes.)
    During initialization, the message is indicated.

Initialization display

11. After completion of initialization, TV set starts again automatically.
    (By this step, software version up has been completed.)

12. By using service mode, confirm the software version.

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Picture Refresh

10-10. Picture Refresh (1/2)

Picture Refresh function (2008 models)

● Contents： Picture Refresh function for storefront display is changed.

● Available models： 2008 North America PDP/LCD all models

● Explanation of Picture Refresh Function
【Changes from 2007 models】

How to enter Picture Refresh mode
  Select from Home/Store display
    ① **"Store" for storefront**
      ・**Picture mode is set to "VIVID".**
      ・**Picture Refresh setting menu is indicated.**
        (Picture Refresh setting spec:
        No changes from 2007 models.)

    ② **Select "Home" for the customers**
      ・**Picture mode is set to "STANDARD".**

How to change Picture Refresh setting:
  Set shipping condition by self check.

  (Even by recycling the AC , Home/Store
  Select display is NOT indicated again.)

How to change Picture Refresh setting:
    -（Factory setting selfcheck)
    - AC Plug OFF and ON
    - Home/Store Select display is indicated again
    - Only for Store select mode, Yes/No is displayed.
    and changing the setting conditions is possible.

Note for service
    After changing A board or DG board or Self check
    (shipping condition setting),
    "Home"/"Store" select display is indicated.
    In the case of uses other than storefront display,
    choose "Home".
    (When "Store" was selected, perform Self check again
    and select "Home".
(For the reference)
  How to indicate Picture Refresh setting menu
    TV set Volume (－) key by TV set
    ＋ "CH UP" key(3 times) by remote controller

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Picture Refresh

10-10. Picture Refresh function (2/2)

● Picture Refresh (2008)
"Home"/ "Store" select display
(After shipping from factory, power SW ON for the first time)
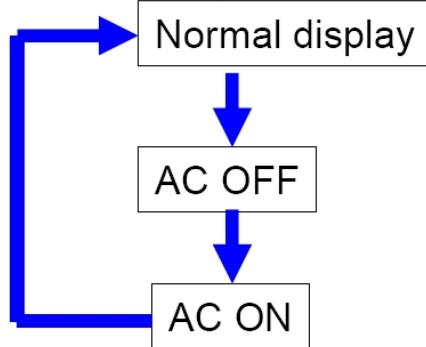
Note: If Store Mode is selected, the picture refresh menu is displayed after the TV is unplugged

Picture Refresh Setting menu

Please select your viewing environment
Home | Store
Select OK
RETURN

Select "Store" →

Picture Refresh
Mode	On
Input	---
Channel	---
Volume	+25
Reset Time	5

Select
Change RETURN
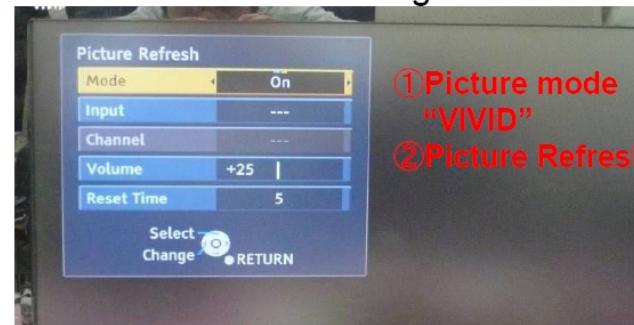
①Picture mode "VIVID"
②Picture Refresh Menu

Select "Home"

↓

| Normal display |

↓

No re-display

| AC OFF |

↓

| AC ON |

Re-display

After setting, "Return" key by remote control
Picture Refresh: Finish

| Normal display | (Picture Refresh : ON)

↓

| AC OFF | (Pull out ACplug)

↓

| AC ON | (AC Plug in)

To get the TV to display the Home/Store menu,
Perform Self check (setting to factory shipping condition) and Power OFF/ON

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Extension Cable List

Model:TH-50/46PZ850U,50/46/42PZ800U,50/46/42PZ85U,50/46/42PZ85U,50/42PX80U

Parts No.	Name & Description	Necessary quantity for one model (pcs)										
		FHD								HD		
		PZ850U		PZ800U		PZ85U		PZ80U		PX80U		
		A,D	P	A,D	P	A,D	P	A,D	P	A	P(50)	P(42)
TZSC09124	Extension Cable A10/A12- SP(R/L)	2	---	2	---	2	---	2	---	2	---	---
TZSC09125	Extension Cable A10/A12- SP(R/L)	2	---	2	---	---	---	---	---	---	---	---
TZSC09126	Extension Cable K1-A1/S2	---	---	---	---	---	---	---	---	1	---	---
TZSA09127	Extension Cable K1-A1/S2	---	---	---	---	---	---	1	---	---	---	---
TZSA09128	Extension Cable K1-A1/S2	---	---	---	---	1	---	---	---	---	---	---
TZSC09129	Extension Cable K1-A1/S2	1	---	1	---	---	---	---	---	---	---	---
TZSC09130	Extension Cable A3-D3	1	---	1	---	1	---	1	---	---	---	---
TZSC09131	Extension Cable A6-P6	1	1	1	1	1	1	1	1	---	---	---
TZSC09132	Extension Cable A7-P6/P7	---	---	---	---	---	---	---	---	1	1	1
TZSC09133	Extension Cable A7-P7	1	1	1	1	1	1	1	1	---	---	---
TZSC09110	Extension Cable A25-P25	---	---	---	---	---	---	---	---	1	1	1
TZSC09134	Extension Cable D25-P25	1	1	1	1	1	1	1	1	---	---	---
TZSC09135	Extension Cable A30-PB30	1	---	1	---	1	---	1	---	---	---	---
TZSC09136	Extension Cable A51-G51	---	---	---	---	---	---	---	---	1	---	---
TZSC09137	Extension Cable A51-G51	1	---	1	---	---	---	---	---	---	---	---
TZSC09138	Extension Cable A51-G51	---	---	---	---	1	---	1	---	---	---	---
TZSC09139	Extension Cable A52-GS52	---	---	---	---	---	---	---	---	1	---	---
TZSC09140	Extension Cable A52-GS52	---	---	---	---	---	---	1	---	---	---	---
TZSC09141	Extension Cable A52-GS52	---	---	---	---	1	---	---	---	---	---	---
TZSC09142	Extension Cable A52-GS52/GL2	---	---	1	---	---	---	---	---	---	---	---

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Panasonic ideas for life

Extension Cable List

Parts No.	Name & Description	Necessary quantity for one model (pcs)										
		FHD								HD		
		PZ850U		PZ800U		PZ85U		PZ80U		PX80U		
		A,D	P	A,D	P	A,D	P	A,D	P	A	P(50)	P(42)
TZSC09107	Extension Cable P2-SC2,P11-SS11	---	2	---	2	---	2	---	2	---	2	2
TZSC09108	Extension Cable P12-SS12	---	1	---	1	---	1	---	1	---	1	1
TZSC09143	Extension Cable A5-D5	1	---	1	---	1	---	1	---	---	---	---
TZSA09144	Extension Cable A9-GS9	1	---	1	---	---	---	---	---	---	---	---
TZSA09115	Extension Cable A11-GH11	1	---	1	---	1	---	1	---	1	---	---
TZSC09150	Extension Cable A20-SC20	---	---	---	---	---	---	---	---	1	---	---
TZSC09149	Extension Cable D20-SC20	---	---	---	---	1	---	1	---	---	---	---
TZSC09117	Extension Cable P9-AC inlet	---	---	---	---	---	---	---	---	---	1	---
TZSC09118	Extension Cable P9-AC inlet	---	---	---	---	---	---	---	---	---	---	1
TZSC09148	Extension Cable P9-AC inlet	---	1	---	1	---	1	---	1	---	---	---

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2008 PDP Extension Cable for A board (PX80U series) (1/2)

Original | New

SU
SC
SD
P
A
AC
SS
C1 C2
SP > GS GH G K S < SP

SU
SC
SD
P
P6
P7
P25
AC INLET
SS
SC20
C11 C21
C1 C2
GS52 GH11 G51 S2
SP GS GH G K K1 S SP

A52-GS52 (TZSC09139)
A11-GH11 (TZSC09115)
A12-SP(R/L) (TZSC09124)
A7-P6/P7 (TZSC09132)
A25-P25 (TZSC09110)
A20-SC20 (TZSC09150)

K1-A1/S2 (TZSC09126)
A51-G51 (TZSC09136)
A32-C21 (TSXL575)
A31-C11 (TSXL557)

A1 A51 A11 A32 A31 A52
A20
A12 A7 A25
A

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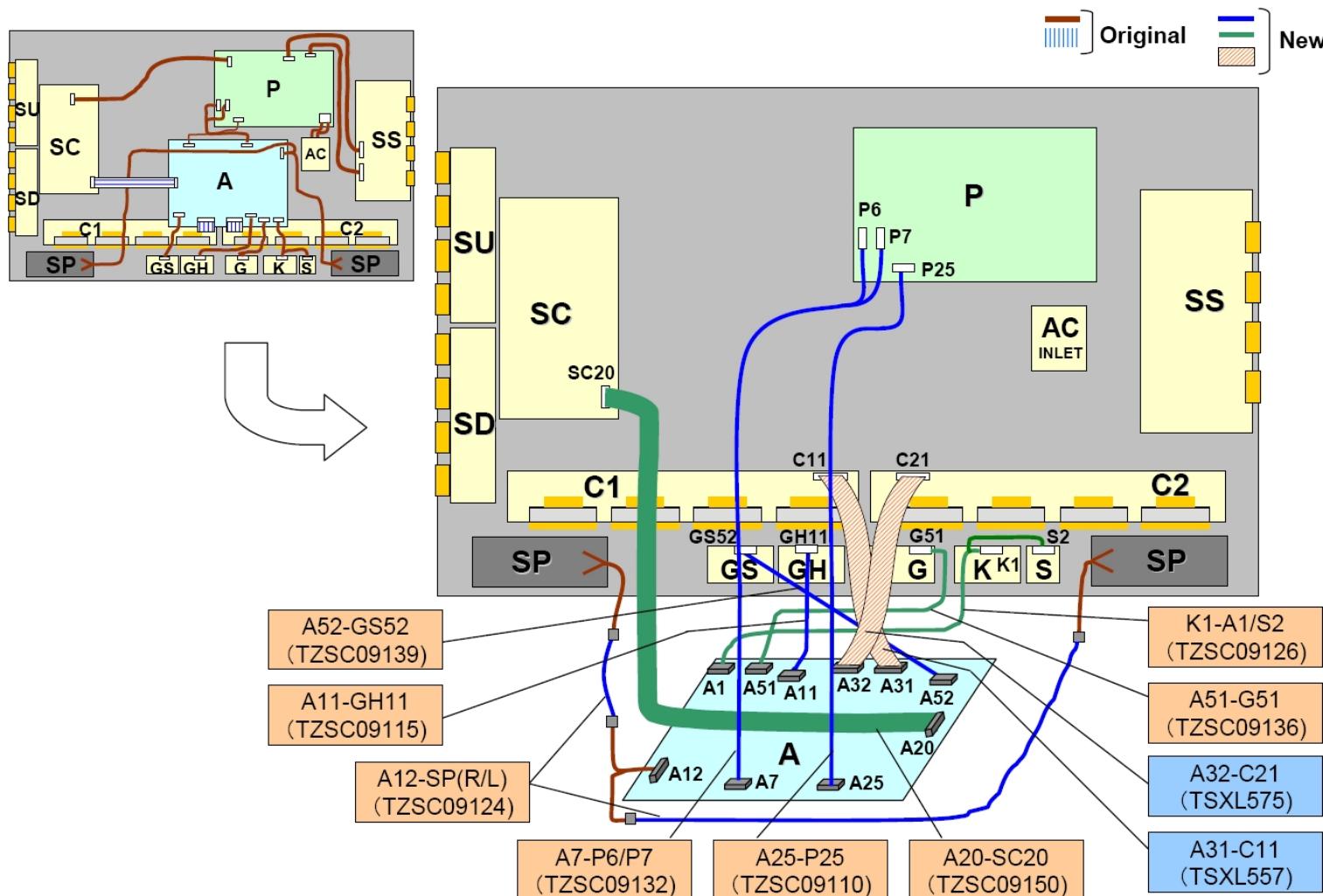
2008 PDP Extension Cable connection for A board (PX80U series) (2/2)

Example for TH-42PX80U

A25-P25 (TZSC09110)

A32-C21 (TSXL575)

A20-SC20 (TZSC09150)

A31-C11 (TSXL557)

K1-A1/S2 (TZSC09126)

A52-GS52 (TZSC09139)

A51-G51 (TZSC09136)

A11-GH11 (TZSC09115)

A12-SP(R/L) (TZSC09124)

A7-P6/P7 (TZSC09132)

A board

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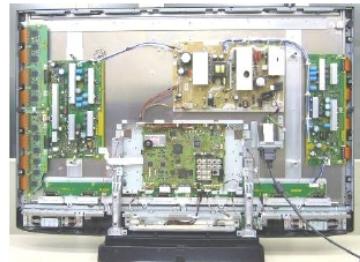
Extension Cable TH-XXPX80U (P Board)

2008 PDP Extension Cable for P board (PX80U series) (1/2)

Original   New

P2-SC2,P11-SS11 (TZSC09107)

A7-P6/P7 (TZSC09132)

P12-SS12 (TZSC09108)

P9-AC Inlet (50") (TZSC09117)

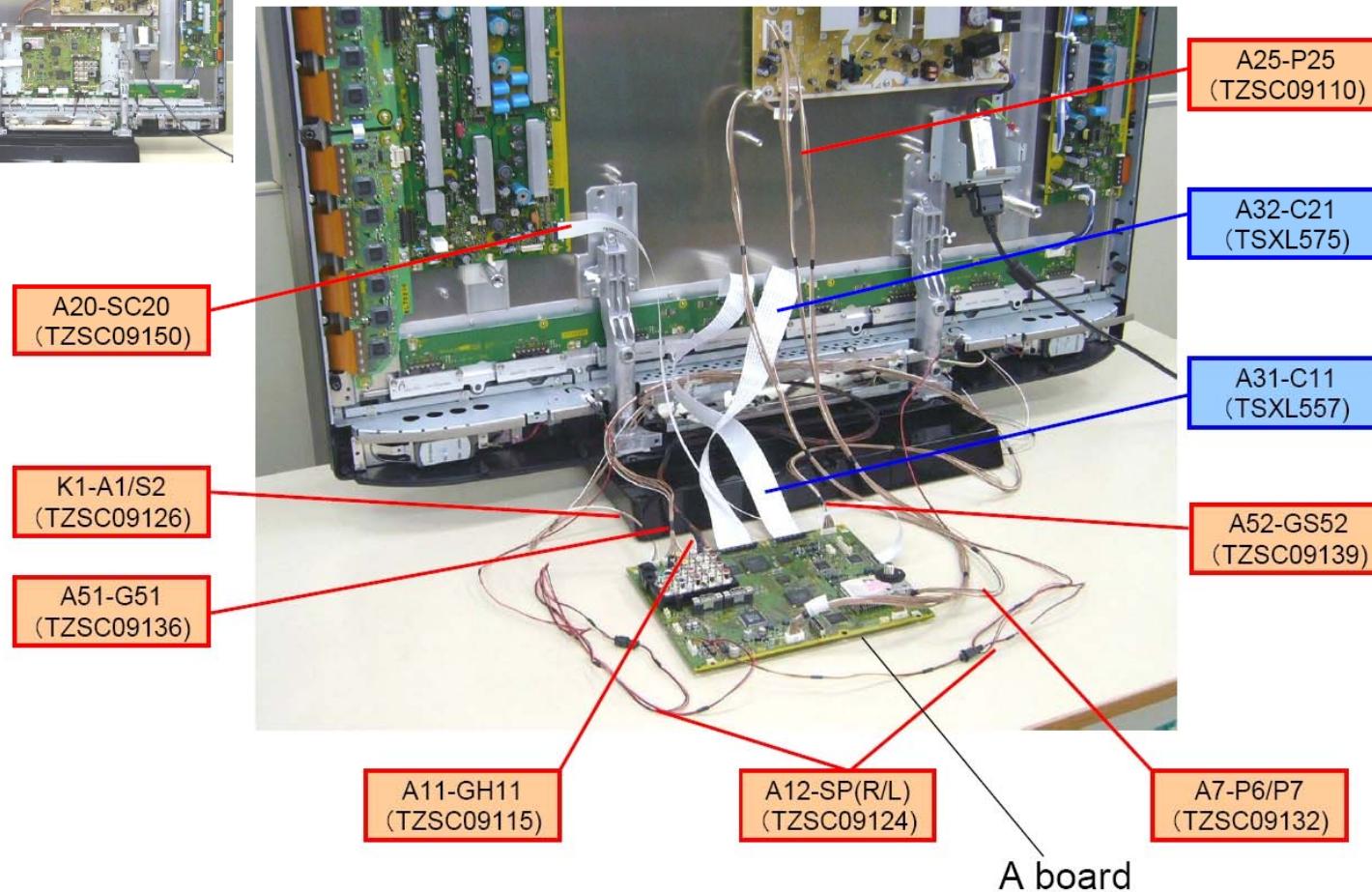P9-AC Inlet (42") (TZSC09118)

A25-P25 (TZSC09110)
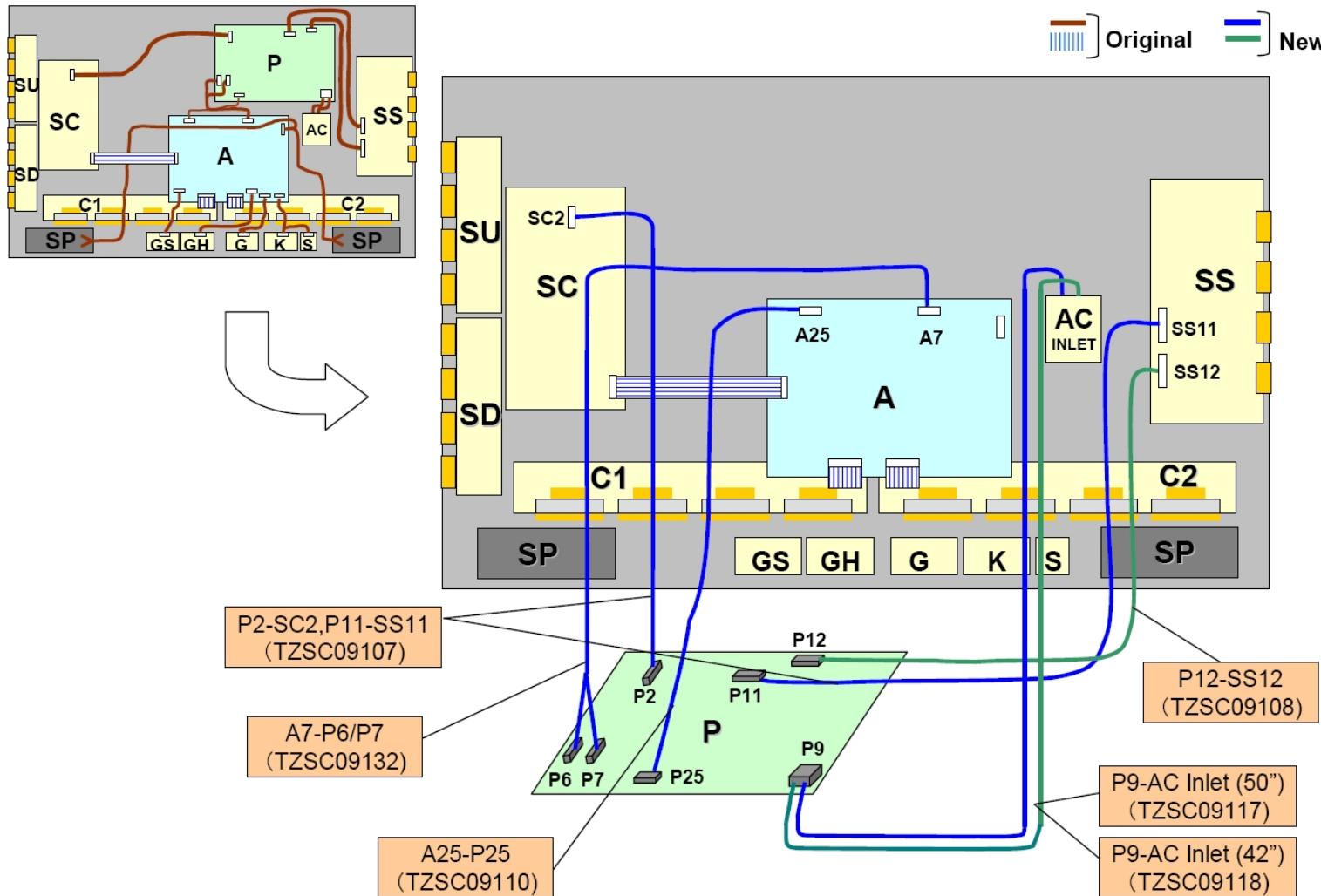
Extension Cable TH-XXPX80U (P Board)

2008 PDP Extension Cable Connection for P board (PX80U series) (2/2)
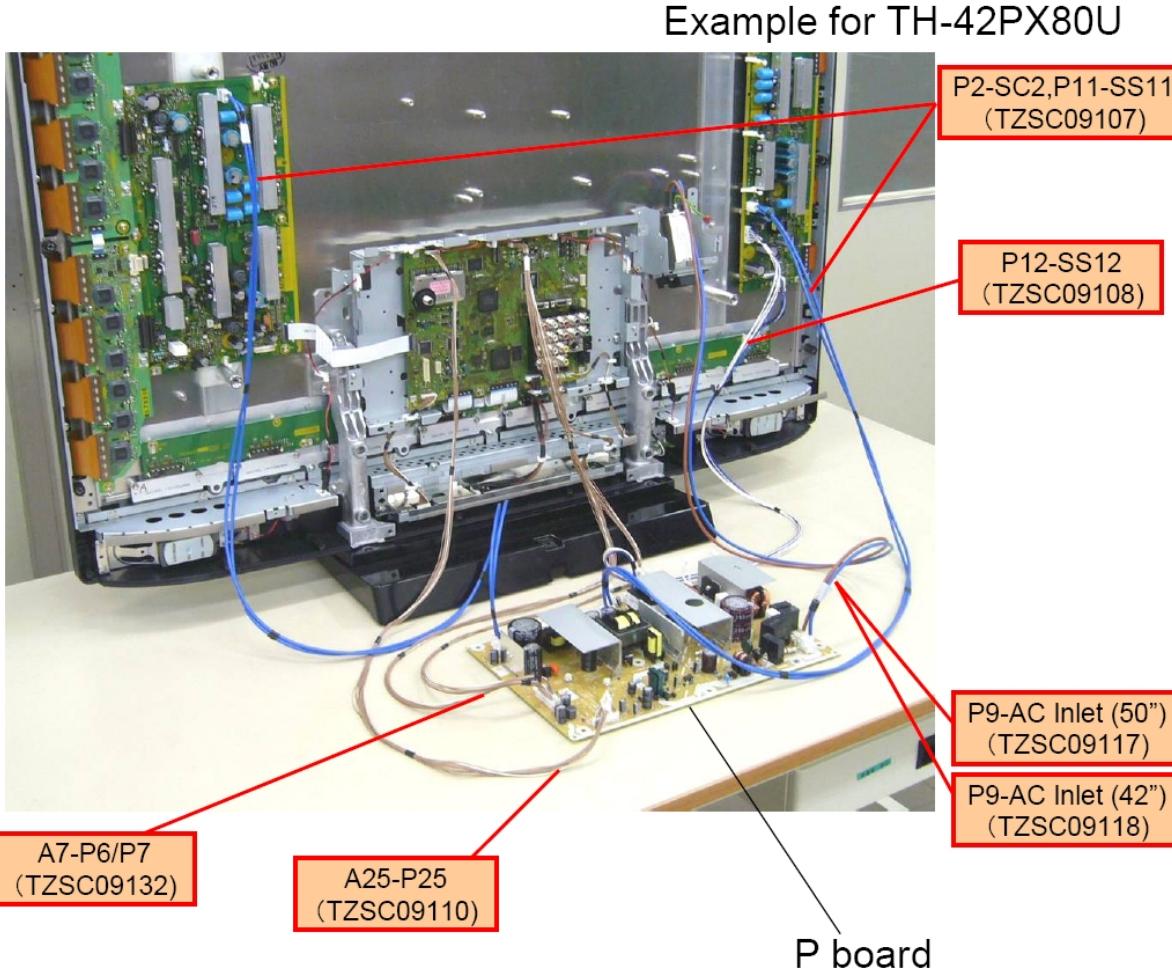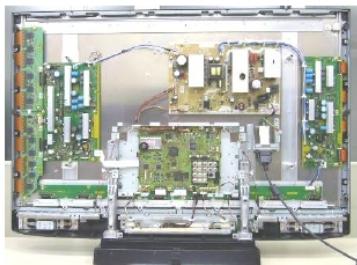
Example for TH-42PX80U

P2-SC2,P11-SS11
（TZSC09107）

P12-SS12
（TZSC09108）

P9-AC Inlet (50")
（TZSC09117）

P9-AC Inlet (42")
（TZSC09118）

A7-P6/P7
（TZSC09132）

A25-P25
（TZSC09110）

P board

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Thank you!

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